

December 2018

National Operations & Maintenance Specification

NOTE TO Spec Writer: to be filled out by the Region

SOLICITATION NUMBER: G S - [] P - [] - [] - [] -

SERVICE: OPERATIONS & MAINTENANCE AND RELATED SERVICES

LOCATION(S):

PERIOD OF PERFORMANCE:

SOLICITATION ISSUE DATE: xxxx xx, 20xx

OFFER RECEIPT DATE/TIME: xxxx xx, 20xx

Please remove this page after reviewing

Remove this Section when finished with Performance Based Work Statement (PBWS)

NOTES TO SPECIFICATION WRITER

General Instructions:

The specifications listed constitute the standard for Operations and Maintenance services (O&M) for all PBS facilities. Regions shall not reduce specification provisions, but shall incorporate building specific requirements or adjustments as required. Regions are encouraged to aggregate the services in the national specification across multiple building locations to help further reduce their Contract costs. The region shall conduct a comparative analysis of the requirements required in the specification to determine those benefits through “economies of scale” and the best approach for successful implementation. Additionally, the document has been designed to be flexible and includes editor’s notes in blue and contained within square brackets “[]” to clarify the intent in these sections.

Functional Guidelines:

- Each section and subsection has a specific numbering system; if your building does not require a certain subsection, you must keep the subsection numbering header in the specification, but mark it reserved.
- Add regional-specific information and additional requirements.
- Do not insert page numbering until you have completed the scope to avoid confusion.
- Delete all blue editor’s notes and paragraphs when the specifications are finalized.
- Some exhibits are intended for editor and shall be deleted before sending to the Contractor. Exhibits 1 through 4 are to be submitted along with the PBSW. Exhibit 5 is for the CO or designee, and Facility Manager. Exhibit 6 is to be included in SMART buildings running GSALink technology.
- Be sure to complete the Building Information Sheet (See Exhibit 1) for each building that is covered under the Contract.
- Contractor prices are to include labor, equipment, tools, supplies, supervision, management, and subcontracted services, except as set forth as Government-furnished, and otherwise to perform and provide the work described in Performance Based Work Statement (PBWS).
- Tenants that delay Contractor access to the space they occupy shall reimburse GSA for the cost of delay. The CO or their designee shall specify in the contract what constitutes timely access to tenant’s space.
- Prior to sending out the specifications for Contractor’s bid, check with the tenant’s occupancy agreement or reach out to the appropriate tenant representative(s) to ensure the PBWS meets the tenant’s services requirements. Tenant requirements that exceed the standard services are reimbursable to GSA.

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Section 1 General Contract Requirements

C.1.0 GENERAL

This is a Performance Based Work Statement (PBWS) for Facilities Engineering: Operations, Maintenance, and Related Services defined under the scope of this contract. This PBWS describes the minimum requirements of the U.S. General Services Administration (GSA) and acceptable outcomes to be performed by the Operations and Maintenance Contractor (known from here on as Contractor). All, or part of, the successful offeror's Management Plan shall be incorporated into the contract.

GSA seeks to establish a partnering relationship with the Contractor to accomplish the program objectives in this contract. The objective of the partnering process is to provide an effective problem-finding/problem-solving management team composed of personnel from both parties, thus creating a single culture with one set of goals and objectives. Partnering requires that both parties recognize and address those opportunities and challenges that shall be confronted to help maintain the health of the Contractor/GSA relationship. The relationship is based on trust, dedication to common goals, and an understanding of each other's individual expectations and values. The team shall consider utilizing a facilities engineering and systems thinking approach to provide solutions from a global perspective. The outcome of this initiative is for GSA to leverage Contractor expertise to assist GSA in accomplishing these goals and objectives.

GSA intends to purchase Contractor provided technical and managerial expertise to assist in the holistic management of assets over the long term. This program strategy has taken the name "*facilities engineering*" and has proven to be a successful model resulting in efficient and effective management of assets while maintaining a lower overall cost of operations. The facilities engineering model is dependent upon an effective partnership with a highly skilled Contractor whose objectives are based on mutual understanding of the stated requirements and objectives. A higher level of effective communication between the Government and Contractor is essential for partnering and for this performance based service contract to succeed, whereas the success of this contract is shared between the Government and the Contractor. More emphasis is placed on the Contractor's self-management of quality, not the usual inspection by Government inspectors, although that is a part of this contract as well. All parties shall act proactively to reduce service cost.

To establish a standard of facilities engineering practices, thought processes and problem solving throughout the model, GSA established a program philosophy rooted in "*systems thinking*" whereby the means and methods for providing building operations and maintenance are established through investigations, metrics, and feedback loops, and by establishing a partnership between the Government and Contractor to achieve joint performance objectives. The goal of applying systems thinking to facility management is to see that every action or decision in operating, maintaining, and retrofitting a building shall result in an impact (financial, environmental or, human resource, or any combination thereof), and to evaluate the "full circle" implications. Long term application of systems thinking throughout GSA has resulted in both Contractor and Government joint command of short-term and long-term cohesive management of real property assets.

GSA is committed to Federal leadership in the design, construction, and operation of high-performance and sustainable buildings. A major element of this strategy is the implementation of common strategies for operating and maintaining buildings. As a result, this contract requires the Contractor to participate and partner with the Government in the initiative of obtaining high performance and sustainable operations, inclusive of initiatives to conserve energy and water consumption, recycling programs, meeting or exceeding specific environmental, regulatory, or performance standards, and the utilization of green products and services. The following sections detail the GSA minimum requirements and acceptable outcomes. The Contractor shall closely monitor all aspects of the work, identify deficiencies and implement corrective action, without reliance on Government oversight.

To the extent possible and consistent with EO 13788, the Contractor shall maximize the use of goods, products and materials that are produced in the United States.

C.1.1 Scope of Work

The Contractor shall provide management, supervision, labor, materials, equipment, and supplies (shipping & handling) and shall be responsible for the efficient, effective, economical, and satisfactory operation, scheduled and unscheduled maintenance, repair of equipment and systems, including vertical transportation and all related services located within the property line of the following locations:

[[[Note to Spec Writer: Remove reference to vertical transportation systems if your region has a separate contract for vertical transportation systems. Also make changes in sub section 6.12.]]]

[[[Note to Spec Writer: Include if LPOE contract: adjacent buildings such as adjacent Land Port of Entry (LPOE) but under special Memorandum of Understanding/Memorandum of Agreement (MOU/MOA) between GSA and cooperating partners or bridge owner proponents and facilities residing off of GSA property, LPOE outbound canopies that are in use by supporting agencies.]]]

(List locations: Building Number, Building Name, and Building Address)

Additional services may be ordered at the discretion of GSA for work relating to the operations, maintenance and repair or upgrade of the facilities listed above, but not covered in the basic services of the contract. Government furnished items are specifically excluded in this contract, except as specified in Section 3.

C.1.1.1 Discrepancy in the Specifications

In any cases of discrepancy in the specifications, the matter shall be immediately submitted to the Contracting Officer (CO). The decision of the CO as to the proper interpretation of the specifications shall be final in accordance with the Disputes Clause of this Contract.

C.1.2 Personnel

[[[Note to Spec Writer: If a SLA is in place, insert “and conditions are maintained to meet service level agreements per this contract and avoid any disruption”]]]

The Contractor shall adhere to the submitted staffing plan and subcontracting plan that was submitted prior to award as part of the Bid proposal. Contractor shall submit staffing/subcontractor plan that provides sufficient numbers of staff at the various levels of expertise to ensure all scheduled and unscheduled services are performed and conditions are maintained to avoid any disruption to the tenant. Any changes to the proposed staffing levels, qualifications of proposed staff or key personnel, or the areas of expertise or disciplines of the proposed staff shall be submitted for review and approval from the CO or their designee.

C.1.2.1 Contractor Key Personnel

[[[Note to Spec Writer: For small contracts that do not require a full time onsite staff, modify this requirement]]]

The Contractor shall designate a Contract Project Manager in writing and provide the name and contact information to the CO. The Contract Project Manager is considered essential to the work being performed under this Contract. Before removing, replacing, or diverting the Contract Project Manager, the Contractor shall (1) notify the CO two weeks in advance and (2) submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on this Contract.

[[[Note to Spec Writer: For Union labor use Union terms, example Chief Engineer titles.]]]

The Contract Project Manager shall possess at least five years of recent (within the past seven years) experience in the management and supervision of building mechanical operations and maintenance for buildings of the approximate size, complexity and characteristics of the buildings to be covered by this Contract. A detailed resume shall be submitted to the CO or their designee for approval prior to the assignment of the project manager to the Contract. Both new and replacement project manager's shall meet these qualification standards. Minimally, the resume shall contain:

- a. The full name of the proposed project manager.
- b. A detailed description of the proposed project manager's employment history for the previous five years. The names and addresses of the companies for whom the proposed project manager worked for the past five years, along with the names and telephone numbers of the immediate supervisors.

C.1.2.2 Authority

The Contract Project Manager shall have complete authority to act for the Contractor in every detail during the term of the Contract, and shall have the authority to exercise financial expenditures and controls, accept notices of deductions, inspection reports and all other correspondence on behalf of the Contractor. This Contract requires onsite managerial supervision. The Contractor can fulfill this requirement by having the Contract Project Manager located onsite or having an additional onsite Supervisor. If the Contractor decides that the requirement is to be filled with an onsite supervisor, the above requirements for Contract Project Manager shall be the same.

C.1.2.3 Communication Equipment

The Contractor shall provide key operational personnel (Managers, Supervisors, and Mechanical Engineers, Mechanical Supervisors, Operating Engineers, Heating, Ventilation and Air Conditioning (HVAC) Mechanics) with portable electronic means to communicate with GSA for all work covered under this Contract (Work Orders, emergencies, status of projects). Outside of normal working hours, the Contractor shall maintain some designated form of communication with on-call staff to allow the CO or their designee to contact such on-call staff at any time for emergency response. Electronic communication methods are the following:

- Phone/Emails/Text messaging smartphone or tablet devices. The Contractor is responsible for all initial and monthly costs associated with the device(s). In areas where cellular service is unavailable, or unreliable, special exceptions shall be made by the CO or designee on a case-by-case basis. Such devices shall be on the list of GSA-approved devices and are to be processed through GSA's procedures for remote mobile management. This shall allow for mobile access to GSA email, the National Computerized Maintenance Management System (NCMMS) mobile environment and Building Automation Systems (BAS) alarms. The process for this and the list of currently approved devices is available upon request. Contractor personnel under this Contract must obtain and maintain an official GSA ENT account (this is your enterprise account for signing into systems administered by GSA) and monitor their GSA email account for all notifications.
- Fax. Receiving and sending faxes is acceptable as a secondary communication method for locations that have problems with wireless device signal strength. However, delaying faxes because of combined usage of voice and fax on the same line is not acceptable.
- Administrative Station – Contractor shall provide at least one Desktop/Laptop device per each contract group of buildings for NCMMS. Contractor shall maintain the device per GSA IT requirements, including patching and security software. Contractor shall provide and maintain core Operating Systems, updates, revisions and Microsoft Office (MS Office) tools.

[[[Note to Spec Writer: If the Government provides the Desktop/laptop per each Contract Group of buildings for NCMMS, change the language to reflect that the Government is providing the device.]]]

C.1.2.3.1 CIO 2100 IT Security Policy

The Contractor shall ensure compliance with GSA Order CIO 2100.1K. Contractor core personnel under this Contract must obtain an official GSA email account. Employees must have clearance before they shall access GSA email, NCMMS, or other Government systems. The GSA Order CIO 2100 prohibits an employee or Contractor supporting GSA from creating or sending information using a non-official GSA electronic messaging account (*i.e.*, company or personal email account). The Contractor shall ensure compliance with the Department of Homeland Security ICS-CERT cyber security guidance and recommendations. Guidance can be found at the web site in document titled "Web Links" at: [Operations and Maintenance Specification](#)

C.1.2.4 Language

On-site personnel and the Contractor's Point of Contact (POC) for GSA need to be proficient in English, and must be able to read, write, speak, and understand English.

C.1.2.5 Employee Suitability

[[[Note to Spec Writer: Include any local/building/tenant requirements that could be more stringent or different]]]

The GSAR 552.237-71 Qualifications of Employees (1989) clause shall be followed at all times during the performance of this Contract.

- a. All Contract employees requiring routine unescorted access to federally controlled facilities or information systems, or both, for more than six months (Regular Employees) shall be required to undergo a suitability determination before a personal identification verification (PIV) card is issued. Prior to the time that an identification card is issued, such Regular Employees shall be required to comply with normal facility access control procedures, including recording presence, temporary badging, and escorted entry, as applicable.
- b. Failure of a Regular Employee to receive a favorable suitability determination shall be cause for removal of the employee from the work site and from other work in connection with the Contract.
- c. Contract employees working less than six months (Temporary Employees) shall, at the Government's option, be required to undergo a lesser form of suitability determination. Prior to the time that an identification card is issued, if at all, such Temporary Employees shall be required to comply with normal facility access control procedures, including recording presence, temporary badge, and escorted entry, as applicable.
- d. The Government, at its sole discretion, may grant temporary suitability determinations to Regular or Temporary Employees. However, the granting of a temporary suitability determination to any such employee shall not be considered as assurance that a favorable suitability determination shall follow.
- e. The CO or designee shall provide the Contractor with the required clearance procedures for obtaining necessary clearances. The Contractor shall comply with these clearance procedures.
- f. The Contractor shall be responsible for planning and scheduling its work in such a manner as to account for facility access issues. Difficulties encountered by the Contractor in gaining access to facilities by its employees and subcontractors shall not be an excuse for any lack of Contractor performance under the Contract.

C.1.2.6 Employee Technical Qualifications

Employees or subcontractors performing Contract work involving the operation, maintenance or repair, inspection, or testing of any piece of equipment or system shall be trained and possess the knowledge, experience and skills pertinent to the equipment or system as demonstrated by a current training certificate from an equipment manufacturer or a certificate by an organization acceptable to the CO. Contractor personnel shall have NCMMS skills sufficient for "Use of NCMMS" as described in this subsection. All personnel or sub-contractor personnel shall

possess all certifications and licenses required by Federal, state and local jurisdictions and National Fire Protection Association (NFPA) 72, National Fire Alarm Code, section 10.5, for equipment that they shall be operating, maintaining, repairing, inspecting or testing. At a minimum, a mechanic in each trade (e.g., electric, HVAC, plumbing) shall be a licensed journeyman grade in the local municipality in which they are working. All personnel under the team leader or sub-contractor personnel shall have the experience and skill set knowledge as described in the Service Contract Act (SCA) Directory of Occupations, Fifth Edition or later. For example, HVAC mechanics need to be as proficient as dictated by the 23410 and 23411 series and general maintenance mechanic shall be as proficient as dictated by the 23370 series.

C.1.2.7 Certifications

Copies of all certifications for Contractor employees shall be kept on-site and provided to the Government upon request. The Contractor shall provide to the CO or their designee documentation of the certificates of training, licenses, and permits for all new employees not later than seven business days prior to that person beginning work under the terms of this Contract. The Contractor shall ensure that all certificates of training, licenses, permits, and bonds are current and valid and are loaded in NCMMS.

C.1.2.7.1 Qualifications of Fire Alarm System Technicians

- a. Technicians performing contract work involving the inspection, testing, and preventive maintenance or repair of fire alarm systems shall be certified by the National Institute for Certification in Engineering Technologies (NICET) and possess at least a NICET Level 2 (Associate Engineering Technician) in Fire Protection Engineering Technology, Fire Alarm Systems. The Contractor shall submit to the CO or designee the NICET level certification number and expiration date for each field technician and inspector responsible for performing fire alarm system preventive maintenance and repair services required under the terms of this Contract.
- b. Technicians modifying the programming software of the fire alarm system shall also be factory trained and certified by the system manufacturer for the specific type and brand of fire alarm system being serviced. The Contractor shall submit to the CO or designee the factory trained certification number and expiration date for each specific manufacturer's equipment for each technician responsible for performing programming of the fire alarm system.

C.1.2.7.2 Qualifications of Water-Based Fire Suppression System Technicians

Technicians performing contract work involving the inspection, testing, and preventive maintenance or repair of water-based fire suppression systems shall be certified by the National Institute for Certification in Engineering Technologies (NICET) and possess at least a NICET Level 2 (Associate Engineering Technician) in Fire Protection Engineering Technology, Inspection, and Testing of Water-Based Systems. The Contractor shall submit to the CO or designee the NICET level certification number and expiration date for each field technician and inspector responsible for performing water-based fire suppression system PM and repair services required under the terms of this Contract.

C.1.2.7.3 Qualifications of Technicians

[Dry Chemical Extinguishing System], [Wet Chemical Extinguishing System]; [Clean Agent Fire Extinguishing System]; [Halogenated Extinguishing System]; [Carbon Dioxide Extinguishing System]; [Ventilation System Fire Extinguishing System]; [Smoke Control]; [Fire Damper]; [Smoke Damper]; [Combination Fire/Smoke Damper]; [Fire-rated Door Assemblies]; [Smoke Door Assemblies]; [Portable Fire Extinguisher]; [Emergency and Standby Power]; [Emergency Lighting Equipment]; [Exit Signage]

Technicians shall be trained and possess a current training certificate for inspecting, testing, and maintaining these components from an equipment manufacturer or a certificate by an organization acceptable to the CO. The Contractor shall submit to the CO or designee the certification document and expiration date, issued by the equipment manufacture or organization confirming the technician has been trained, for each field technician and inspector responsible for performing the inspection, testing, and maintenance of such systems/equipment under the terms of this Contract.

C.1.2.7.4 Qualifications for Electrical Technician

Technicians performing Sub-Contract work involving inspections, testing, and maintenance for the electrical switchgear shall meet the qualifications by the American National Standards Institute/International Electrical Testing Association ETT-2015, Standard for Certification of Electrical Testing Technicians or qualifications by the National Institute for Certification in Engineering Technologies (NICET) and hold at least a Level 3 certification. The Contractor shall provide documentation to the CO or designee on qualifications identified in this standard. Certification can be obtained through; the ANSI/NETA Certification program or Electrical Testing Technician Certification Institute. Guidance can be found at the web site in document titled "Web Links" at: [Operations and Maintenance Specification](#)

Alternate certifications presenting evidence of equal or greater skills and qualification may be substituted; however, the burden to evidence the quality of such certification falls fully upon the vendor.

C.1.2.8 Employee Training

The Contractor shall submit a training program to ensure employees working in a Federal building have the experience, knowledge, skills and abilities to perform the work required by this Contract. The Contractor shall document training and provide documentation to the CO or designee.

C.1.2.8.1 Asbestos Awareness Training

[[[Note to Spec Writer: Include for buildings that contain asbestos or where it has been presumed. If no asbestos could possibly be found in your facility, add 'No buildings on this Contract contain asbestos']]]

The Contractor shall ensure that all employees, including replacement workers, receive asbestos training and refresher training in accordance with 40 C.F.R part 763 and 29 C.F.R. part 1910. The Contractor shall follow all instructions for each asbestos class job as outlined in 29 C.F.R. part 1910. The training shall be conducted, at no additional expense to the

Government, within 60 calendar days of Contract start date. The Contractor shall submit written certification to the CO or designee within five business days of the completion of training.

C.1.2.8.2 Re-Tuning Training

The Contractor shall ensure that all Mechanical Engineers, Mechanical Supervisors, Operating Engineers, HVAC Mechanics, and Control Technician employees, including replacement workers, receive Building Re-Tuning Training, (guidance can be found at the web site in document titled “Web Links” at: [Operations and Maintenance Specification](#) a five (5) to six (6) hour online course) and refresher training every two years. The training shall be conducted, at no additional expense to the Government, within 60 calendar days of the Contract start date. The Contractor shall submit written certification to the CO or designee within five (5) business days of the completion of training for each employee identified above.

C.1.2.8.3 Education Requirements and Certifications

[[[Note to Spec Writer: For Union workers request Journeymen certifications.]]]

All HVAC personnel designated to operate, maintain, or repair, or any combination of HVAC equipment or systems shall possess one or more of the following certifications:

- a. North American Technician Excellence (NATE) HVAC Service Technician Certification
- b. HVAC Excellence Professional Level Certification
- c. UA Star HVAC Mastery Certification

All HVAC personnel designated, to operate, maintain, and or repair, or any combination of HVAC equipment or systems shall maintain a minimum of 16 hours of continuing education per year from either NATE, HVAC Excellence, or UA Star recognized provider program.

The Contractor shall submit written certification to the CO or designee.

C.1.2.8.4 NCMMS Training

The Contractor shall ensure that all staff and replacement staff using the NCMMS receives virtual NCMMS Training, which takes approximately 12 hours to complete and can be found at the web site in document titled “Web Links” at: [Operations and Maintenance Specification](#). The training shall be completed at no additional expense to the Government, during Contractor’s inbound transition period. The Contractor shall submit written certification to the CO or designee within five (5) business days of the completion of training for each employee who uses the NCMMS. The NCMMS regional trainers will take attendance and administer quizzes during the course. Trainees who pass the quizzes will receive credit for completing class.

C.1.2.8.5 Lead Awareness Training

[[[Note to Spec Writer: Include for buildings that contain lead or where it has been presumed. If no lead could possibly be found in your facility, add ‘No buildings on this contract contain lead’].]]]

The Contractor shall ensure that all employees, including replacement workers, receive lead awareness training and refresher training in accordance with 29 CFR 1910.1025(l) (1) (i). The training shall be conducted, at no additional expense to the Government, within 60 calendar

days of Contract start date. The Contractor shall submit written certification to the CO or designee within five (5) business days of the completion of training.

C.1.2.9 Appearance

Contractor personnel shall present a neat appearance and be easily recognized. This shall be accomplished by wearing uniforms bearing the name of the company and employee name. Uniforms shall be regularly laundered, consistent among personnel classifications, and maintained presentable to tenant personnel during all working hours.

C.1.2.10 Standards of Conduct

The Contractor shall be responsible for maintaining satisfactory standards of employee competency, conduct, appearance, and integrity and shall be responsible for taking disciplinary action with respect to its employees, as necessary. The Contractor is responsible for ensuring that its employees do not disturb papers on desks, open desk drawers or cabinets, or use Government telephones, except as authorized. Each employee must adhere to standards of behavior that reflect favorably on his or her employer and the Federal Government. Smoking is only allowed in designated areas on the property and no smoking is allowed within the Facility.

C.1.2.11 Recording Presence

[[[Note to Spec. Writer: If there is another sign in procedure delete this and add in.]]]

Each Contract employee shall sign in when arriving and departing the facility daily and follow card access requirements as directed by the CO or designee. The Contractor shall accumulate GSA Form 139 (Record of Time of Arrival and Departure from Building) or other designated form for use in recording presence each calendar week, and certify in writing on each form that the information shown is true and correct within ____ **[[[Insert timeframe]]]** business days of the end of the work week. The Contractor shall provide copies of these records to the CO or designee upon request.

C.1.2.12 Personal Identity Verification Requirements

Contractor employees that require access to GSA-controlled facilities or information systems to perform Contract requirements shall comply with GSA personal identity verification requirements, guidance can be found at the web site in document titled "Web Links" at: [Operations and Maintenance Specification](#). The Contractor shall insert this clause in all subcontracts when the subcontractor is required to have access to a GSA-controlled facility or access to a GSA-controlled information system.

C.1.2.13 Credentials and Identification

Contractor personnel with credentials shall be required to comply with all access security screening procedures applicable to Government or other personnel possessing similar credentials, or as determined by the building practices as defined by the Facility Security Committee. All Contractor personnel possessing credentials (PIV or otherwise) shall visibly display their credentials at all times while in the building(s) where work is being performed.

The Contractor shall be responsible for ensuring that all identification credentials are returned to the CO or designee whenever its employees leave the Contract (*i.e.*, when the Contract has been completed, employees leave the company, employees are dismissed or terminated or the

Government determines that the employee is to be removed from the contract). The Contractor shall notify the CO or designee whenever employee badges are lost.

The Contractor shall be responsible for paying the Government for replacement credentials at the current cost per badge.

C.1.2.14 Escorting

[[[Note to Spec Writer: Review security clearance policy for specific building escorting and modify as appropriate.]]]

Temporary contract employees who do not have favorable preliminary or final suitability determinations and need to work in non-public federally-controlled space must be escorted. In those cases, the Contractor shall comply with the security clearance procedures for Escort Only Contractors. All uncleared contract employees shall be escorted in non-public space by a Government employee or another responsible cleared contract employee who is approved by the CO or designee. Other Government agencies shall have specific agency security requirements for their own space that shall only allow escort by Government employees or those designated by their agency. Government employees or approved cleared contract employees who provide escorts for uncleared contract employees shall always be within eyesight of the uncleared contract employees. The Contract Government escort shall watch uncleared employees and remain with uncleared contract employees for the entire time they are in non-public federally controlled space. Any security violation of escort requirements by a cleared and approved contract employee shall result in the immediate removal from the Contract of all contract employees involved, *i.e.*, escorts and uncleared escorted contract employees. Also, violations of escort requirements by subcontract employees in accordance with security requirements shall be grounds for loss of facility access for those individuals or grounds for termination of Contract, or both.

C.1.3 Quality Control Program

A Quality Control Program (QCP) shall be developed and implemented by the Contractor. The Contractor's QCP shall ensure Contract compliance, and act to ensure that potential problems with building services, equipment and systems are identified, documented, and resolved prior to failure. In the event the Government Quality Assurance Program identifies deficiencies the Contractor shall implement progressively responsive quality control measures commensurate with the severity of the Government's deficiencies. Deficiencies identified by the QCP or QASP shall be recorded in the NCMMS and corrected.

[[[Note to Spec Writer: This subsection shall be coordinated with the proposal submission requirements. Note that the Quality Control Plan must be submitted as part of the technical proposal for review prior to award and shall be clearly identified in the evaluation factors.]]]

C.1.3.1 Quality Control Plan

The "Quality Control Plan" (QC plan) is the Contractor's complete written system for identifying and correcting deficiencies in the quality of services. Preparation of the QC plan is the

responsibility of the Contractor and is due with the Contractor's proposal.

The QC plan, revisions or updates shall be submitted for approval by the CO or designee. A review of the QC Plan can be initiated by direction of the CO or designee.

C.1.3.2 Quality Control Plan Contents

The QC plan shall detail the Contractor's methods, frequencies, documentation, and remedies for ensuring that work performed is of the highest quality. It shall describe procedures for correcting problems and addressing quality assurance findings by the Government. The Contractor shall further customize the QC plan to meet facility specific conditions, describing the Contractor's overall approach, service calls and preventive maintenance/inspection schedules, roles and responsibilities as it relates to quality control. The QC plan is to be submitted for review and approval to the CO or designee within 30 calendar days of Contract start date.

C.1.3.2.1 Inspection Program

[[[Note to Spec Writer: Recommend to submit the Quality Control Plan as a stand-alone attachment not subject to the page restrictions of the Technical Proposal.]]]

The Contractor shall develop an inspection program that ensures a safe and efficient level of operation of all equipment and services required in this PBWS. It shall specify the areas to be inspected on a scheduled or unscheduled basis, how frequently inspections shall be accomplished, and the title of the individual(s) (third party or corporate) who shall perform the inspections. The inspection program shall provide for a written record of inspections and results. The inspection program plan shall be planned, scheduled, tracked, and reported via the NCMMS.

C.1.3.2.2 Methods

The Contractor shall identify its methods for identifying and preventing deficiencies in the quality of service performed before the level of performance becomes unacceptable.

C.1.4 Quality Assurance

GSA's role in quality assurance is to ensure that the Contractor is achieving the quality levels established in the operation and maintenance services contract and focuses on the Contractors' QC plan. GSA periodically validates the execution of the Contractor's QCP by reviewing such areas as the Contractor's inspection forms, service request logs, tenant reports, tenant satisfaction surveys, the NCMMS surveys, and the timeliness of corrective actions.

As part of the Government's quality assurance program, the Government may:

- a. Review and, if warranted, reject any reports or other submittals required from the Contractor.
- b. Review performance and service records, including monthly progress reports, BAS data, NCMMS data, and any computerized or hard copy records maintained by the Contractor documenting performance under this Contract, and require correction of any unsatisfactory conditions noted.
- c. Determine the adequacy of the Contractor's QCP and documentation and the overall

- success of this program. The Government shall order improvements, if it determines the program is insufficient or ineffective.
- d. Obtain tenant satisfaction and NCMMS survey information and require improvements in service on the basis of such information to the extent such results correlate with deficiencies in Contract requirements.
 - e. Conduct physical inspections of facility equipment and systems, including programs and files maintained on computers in Contractor onsite offices and work areas, and require correction of deficiencies noted.
 - f. Perform inspections with Government personnel or independent third party inspectors.

C.1.4.1 Contracting Officer's Representative (COR)

Contracting Officer's Representatives (COR) shall be appointed to monitor Contractor performance, and they have the right to inspect and accept or reject defective services. The COR has the authority to recommend deductions based on findings in the Quality Assurance Report. The name and telephone number of each COR under the Contract shall be furnished to the Contractor in writing by the CO.

C.1.4.2 Government Monitoring

[[[Note to Spec Writer: It is permissible to delete last sentence and add frequency.]]]

The Government shall inspect the Contractor's performance using a quality assurance program (QASP) through random inspections, scheduled inspections, or any other method of inspection by the COR or designee that the Government determines reflects the actual performance of this Contract. Contractor performance shall be evaluated on the basis of the performance success or deficiencies, success or failure in meeting contract requirements, and the Contractor's record of correcting deficiencies when noted. While corrective actions shall be noted, a record of significant performance deficiencies shall lead to a performance evaluation that is less than satisfactory even if the Contractor takes corrective action. The Contractor shall meet with the CO or designee and other Government representatives, at the discretion of the CO or designee, to review Contract performance.

C.1.4.3 Performance Evaluations

[[[Note to Spec Writer: Remove if AbilityOne is the Contractor.]]]

Contractor performance shall be evaluated on the basis of the performance success or deficiencies, success or failure in meeting contract requirements, and the Contractor's record of correcting deficiencies when noted. A mutual good faith effort shall be made by all parties to resolve all issues. GSA uses the Contractor Performance Assessment Reporting System (CPARS) to evaluate the Contractor's performance. Evaluations are generally conducted annually on or about the anniversary date of the Contract and also at the end of the Contract period, but may be conducted more frequently if CO or designee determines it is needed.

C.1.5 Physical Security

The Contractor shall be responsible for safeguarding all Government property provided for

Contractor use in accordance with the Government Property (GP) clause, Federal Acquisition Regulation (FAR) 52.245-1. Any loss of integrity in the lock and keying system shall be immediately reported to the COR.

C.1.5.1 Key Control

The Contractor shall follow the building's key control program; refer to Policy 5900.1ADM, Physical Access Control Systems in U.S. General Services Administration Controlled Space. Keys issued to the Contractor or the Contractor's personnel or subcontractors shall be signed for and not transferred to other personnel unless recorded in the key control log. All new locks shall be incorporated into existing grand master key system. The Contractor shall develop procedures covering key control that shall be included in the QC plan. Providing keys for tenants is reimbursable. The Contractor shall be financially liable and shall furnish locksmith services and key blanks for installation and removal of lock-sets and tumblers, and costs associated with re-keying due to the loss of a master key by Contractor or subcontractor. The Contractor shall also be financially responsible for duplication of keys, replacement of locksets, opening doors in the event of lost keys by employees or subcontractors, and replacement of keys and lock-sets, due to keys not being recovered from terminated employees or subcontractors.

C.1.5.2 Lock Combinations

[[[Note to Spec Writer: This subsection is optional depending on local requirements.]]]

The Contractor shall establish and implement methods of ensuring all lock combinations are not revealed to unauthorized persons. These procedures shall be included in the Contractor's QC plan.

C.1.6 Safeguarding Sensitive Data and Information Technology Resources

C.1.6.1 General

The Contractor is responsible to safeguard sensitive Government data, personal information and the integrity of Government information technology resources. This subsection applies to all users of sensitive data and information technology (IT) resources, including awardees, Contractors, sub-contractors, lessors, suppliers and manufacturers. Contractor personnel requiring access to GSA's Network shall comply with all Federal Information Technology regulations regarding Trusted Internet Connection (TIC) in conjunction with Public Buildings Service (PBS) and GSA Chief Information Officer (CIO) IT policies, *i.e.*, all PBS IT systems needing network connectivity shall reside on the GSA network. The following GSA policies shall be followed:

- a. CIO P 2100.1K, GSA Information Technology (IT) Security Policy
- b. CIO P 2100.2B, GSA Wireless Local Area Network (LAN) Security
- c. CIO 2100.3C, Mandatory Information Technology (IT) Security Training Requirement for agency and Contractor Employees with Significant Security Responsibilities
- d. CIO 2104.1A, GSA Information Technology IT General Rules of Behavior
- e. CIO 2105.1 C, GSA Section 508: Managing Electronic and Information Technology for Individuals with Disabilities

- f. CIO 2106.2, GSA Social Media Policy
- g. CIO 2107.1, Implementation of the Online Resource Reservation Software
- h. CIO 2160.4A, Provisioning of Information Technology (IT) Devices
- i. CIO 2162.2, Digital Signatures
- j. CIO P 2165.2, GSA Telecommunications Policy
- k. CIO P 2180.1, GSA Rules of Behavior for Handling Personally Identifiable Information (PII)
- l. CIO 2182.2, Mandatory Use of Personal Identity Verification (PIV) Credentials
- m. CIO P 1878.2A, Conducting Privacy Impact Assessments (PIAs) in GSA
- n. HCO 9297.1,, GSA Data Release Policy
- o. ADM P 9732.1 D, Suitability and Personnel Security. The Contractor and subcontractors must insert the substance of this order in all subcontracts.

These policies can be found at the web site in document titled “Web Links” at: [Operations and Maintenance Specification](#)

C.1.6.2 Safeguarding and Dissemination of Controlled Unclassified Information

C.1.6.2.1 General

This subsection applies to all recipients of Controlled Unclassified Information (CUI), including offerors, bidders, awardees, contractors, subcontractors, lessors, suppliers and manufacturers. Dissemination of sensitive but unclassified paper and electronic building information shall be made on a need to know basis in accordance with GSA Order PBS P 3490.2, a copy of which shall be made available upon request.

C.1.6.2.2 Marking CUI

Contractor-generated documents that contain building information shall be reviewed by the CO/COR to identify any CUI content, before the original or any copies are disseminated to any other parties. If CUI content is identified the CO or designee shall direct the Contractor, as specified elsewhere in this Contract, to imprint or affix CUI document markings to the original documents and all copies, before any dissemination.

C.1.6.2.3 Authorized Recipients

Building information designated CUI shall be protected and controlled by strictly limiting access to those individuals having a legitimate business need to know such information. Those with a need to know shall include Federal, state and local Government entities, and non-Government entities engaged in the conduct of business on behalf of or with GSA. Non-Government entities shall include architects, engineers, consultants, contractors, subcontractors, suppliers, utilities, and others submitting an offer or bid to GSA, or performing work under a GSA contract or subcontract. Recipient Contractors shall be registered as “active” in the System for Award Management (SAM) database at the web site titled “Web Links” at: [Operations and Maintenance Specification](#). If a subcontractor is not registered in the SAM and has a need to possess CUI building information, the subcontractor shall provide to the Contractor its DUNS number or its tax ID number, a copy of its business license and a valid state driver’s license with

photograph or other valid IDs with photograph. The Contractor shall keep this information related to the subcontractor for the duration of the Contract and subcontract.

All GSA personnel and Contractors shall be provided CUI building information when needed for the performance of official Federal, state, and local Government functions, such as for code compliance reviews and for the issuance of building permits. Public safety entities such as fire and utility departments shall require access to CUI building information on a need to know basis. This clause shall not prevent or encumber the dissemination of CUI building information to public safety entities.

C.1.6.2.4 Dissemination of CUI Building Information

C.1.6.2.4.1 By Electronic Transmission

Electronic transmission of CUI information outside of the GSA network shall use session encryption (or alternatively, file encryption). Encryption shall be via an approved NIST algorithm with a valid certification, such as Advanced Encryption Standard (AES) or Triple Data Encryption Standard (3DES), in accordance with Federal Information Processing Standards Publication (FIPS PUB) 140-2, Security Requirements for Cryptographic Modules per GSA policy.

C.1.6.2.4.2 By Non-electronic Form or on Portable Electronic Data Storage Devices

Portable electronic data storage devices include, CDs, DVD, and USB drives. Non-electronic forms of CUI building information include, among other formats, paper documents.

C.1.6.2.4.2.1 By Mail

Contractors shall use only methods of shipping that provide services for monitoring receipt such as track and confirm, proof of delivery, signature confirmation, or return receipt.

C.1.6.2.4.2.2 In Person

Contractors shall provide CUI building information only to authorized recipients with a need to know such information.

C.1.6.2.5 Record Keeping

Contractor shall maintain a list of all entities to which CUI is disseminated. This list shall include at a minimum: (1) the name of the state, Federal, or local Government entity, utility, or firm to which CUI has been disseminated; (2) the name of the individual at the entity or firm who is responsible for protecting the CUI building information, with access strictly controlled and limited to those individuals having a legitimate business need to know such information; (3) contact information for the named individual; and (4) a description of the CUI building information provided. Once "as built" drawings are submitted, the Contractor shall collect all lists maintained in accordance with this clause, including those maintained by any subcontractors and suppliers, and submit them to the CO. For Federal buildings, final payment shall be withheld until the lists are received.

C.1.6.2.6 Safeguarding CUI Documents

CUI building information (both electronic and paper formats) shall be protected. GSA Contractors and subcontractors shall not take CUI building information outside of GSA or their own facilities or network, except as necessary for the performance of that contract. Access to the information shall be limited to those with a legitimate business need to know.

C.1.6.2.7 Destroying CUI Building Information

When no longer needed, CUI building information shall be destroyed so that marked information is rendered unreadable and incapable of being restored, in accordance with guidelines provided for media sanitization within GSA CIO 2103.1 Controlled Unclassified Information (CUI) Policy and Appendix A of NIST Special Publication 800-88, Guidelines for Media Sanitization. Alternatively, CUI building information may be returned to the CO.

C.1.6.2.8 Notice of Disposal

The Contractor shall notify the CO that all CUI building information has been returned or destroyed by the Contractor and its subcontractors or suppliers with the exception of the Contractor's record copy. This notice shall be submitted to the CO at the completion of the Contract to receive final payment. The Contractor may return the CUI documents to the CO rather than destroying them.

C.1.6.2.9 Incidents

All improper disclosures of CUI building information must be reported immediately to the CO. If the Contract provides for progress payments, the CO shall withhold approval of progress payments until the Contractor provides a corrective action plan explaining how the Contractor shall prevent future improper disclosures of CUI building information. Progress payments shall also be withheld for failure to comply with any provision in this clause until the Contractor provides a corrective action plan explaining how the Contractor shall rectify any noncompliance and comply with the clause in the future.

C.1.6.2.10 Subcontracts

The Contractor and subcontractors shall insert the substance of these subsections 1.6.2, Safeguarding and Dissemination of Controlled Unclassified Information Building Information through 1.6.2.9, Incidents, in all subcontracts.

C.1.7 Hours of Operation

C.1.7.1 Normal Working Hours

The Contractor shall maintain the following customer-service hours, which are referred to in this Contract as Normal Working Hours:

[[[Note to Spec Writer: Specify the business days and hours the operation shall be open to serve customers. When specific requirements or limitations exist, they shall be documented here.]]]

C.1.7.2 Core Coverage Hours

The Contractor shall maintain a staff presence during the core coverage hours. [[[Spec. writer specify hours before and after, recommend core coverage hours is one hour prior to and one hour after normal working hours.]]] The Contractor shall ensure employees maintain communications access with the CO or designee to allow contact by the Government at all times during core coverage hours and to communicate effectively with CORs/Facility Managers and Facility Manager Supervisors.

C.1.7.3 Recognized Holidays

Federal holidays for the purpose of this Contract are New Year's Day, Martin Luther King, JR. Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day. When Federal holidays fall on weekends, a weekday is typically designated as the holiday. Holidays that fall on Saturday are observed on the previous Friday and holidays that fall on a Sunday are observed on the following Monday. Unanticipated holidays declared by the President will count as Federal holidays. As long as the Contractor pays its employees as if it were an anticipated Federal holiday, the Contractor will be paid for the unanticipated holiday as if it were a normal Federal holiday.

[[[Note to Spec Writer: Specify any additional recognized holidays as appropriate to reflect the local situation for this PBWS.]]]

C.1.7.4 Extended Operating Hours

[[[Note to Spec Writer: Regions shall delete this paragraph provision if not applicable to their facility and mark as "Reserved."]]]

The following areas of the building regularly operate during hours outside of Normal Working Hours; supporting equipment shall be operated and maintained by the Contractor so as to support these extended operating hours.

[[[List the areas and hours of operation and O&M personnel.]]]

Areas of the building with extended operating hours may change during the performance period of the Contract. The Contractor shall be notified by the CO in writing by modification of the Contract of these changes as soon as possible.

C.1.7.5 Building Access

The Contractor expects that tenants of the building will provide reasonable access to their space to allow the Contractor to carry out the task of providing those building services that are contracted for by GSA in this document. If the tenant does not provide reasonable and timely access to their space, the Contractor shall immediately notify the CO or designee. The Contractor is not authorized to negotiate or accept any changes, requested by the tenant, to the services required in this specification.

C.1.8 Conservation of Utilities

The Contractor shall be proactive in attempts to meet all current and future energy and utility goals of the Government. The Contractor must establish a Performance Plan addressing

operational methodology for tracking, trending and improving facility efficiencies. They shall ensure, through use of operational logs, preventive maintenance, systems test and balance, and other necessary means, an effective controls sequence of operations best meeting the facility's current and future energy and utility goals. The Contractor must submit the Performance Plan to the CO or designee for approval. This Performance Plan shall be part of the Energy and Water Efficiency Monthly Report. Continually and systematically performing these activities forms the backbone of a robust O&M contract and shall be a primary factor for assessing the performance of the Contractor.

C.1.9 Use of NCMMS

C.1.9.1 General

Contractor shall use the NCMMS for the capture of all work performed at all facilities covered by this Contract including sub-contract work, records documentation, equipment maintenance, locations and inventories, warranty information, job plans, preventive maintenance plans and tracking, O&M manuals, reports, systems inspection, tour sheets, operating logs, safety plans, quality control inspections, Work Orders, Work Order close out, miscellaneous hours information, Overtime Utilities information, all tests, equipment photos, certifications, meter readings, permits, existing deficiency reports, initial deficiency reports and other records required by current and future policies. The Contractor shall use the NCMMS to validate and update the equipment inventory and all locations where Contractor work occurs on a continuous basis including an annual certification that the equipment inventory is up to date and complete.

C.1.9.2 Operations

The Contractor shall use the NCMMS uploader templates to review and bulk update data in the NCMMS. The NCMMS produces the uploader templates as Excel spreadsheets, pre-loaded with data. The Contractor shall use the existing inventory and asset location list in the NCMMS. Any bulk data changes or additions shall be submitted to the COR, using the NCMMS generated/approved templates, linked to valid locations, assets/equipment in the NCMMS. The Contractor shall perform data updates through the NCMMS user interface, instead of bulk uploads.

The Contractor shall:

- a. Maintain and update Equipment Inventory (Assets), Job Plans, Preventive Maintenance, Hazards and Safety Plans in the NCMMS.
- b. Maintain existing equipment labeling per subsection 5.3.2.#b.
- c. Update equipment inventory data on an ongoing basis.

CO or designee shall enforce inventory accuracy by reviewing the NCMMS equipment and location data against equipment for which preventive maintenance was recently performed.

All personnel requiring access to GSA's NCMMS shall obtain a Government access account ENT credential and maintain an up to date system profile. At a minimum this shall entail logging into the GSA system at least once every 30 business days to maintain an active profile, and completing the mandatory annual GSA IT Security Training courses through GSA Online University, find link at the web site in document titled "Web Links" at: [Operations and](#)

[Maintenance Specification](#). For routine updates and notices the Contractors shall use the gsa.gov email address as the sole communications venue and this email must be kept active.

The Contractor shall use the NCMMS mobile work management practices, including GSA NCMMS mobile applications, to create, update and complete Work Orders; and record start/finish/ complete times for Work Orders in real-time.

C.1.9.3 Reporting

Contractor shall deliver upon request of the COR or CO, reports produced from the NCMMS and use the NCMMS to provide current Contract monthly submittal requirements, such as monthly reporting quality control reports; completion of scheduled Work Orders, and Contract reports of accomplishment of services for the CO or designee when requested.

C.1.10 Documentation and Records

All records and files that this Contract requires the Contractor to maintain shall be made readily accessible to Government representatives, including third-party contract inspectors, on request. All records, files, plans, and other Contract-related documents used or generated during the course of the Contract by the Contractor, including all standard operating procedures, preventive maintenance plan schedules and building operating plans, shall become the property of the Government, (excluding, however employee personnel files and company financial information). Files are to be provided in both hard copies and electronic copies. All records are subject to the Freedom of Information Act and Privacy Act and any requests for release of any records shall be handled accordingly.

C.1.11 Ordinances, Taxes, Permits, and Licenses

Without additional expense to the Government, the Contractor shall fully comply with all local, city, state, and Federal laws, regulations, and ordinances. The Contractor shall also be liable for all applicable Federal, state, and local taxes and shall obtain and pay for all permits, fees and licenses governing performance under the Contract.

C.1.12 Other Contractors

The Government shall undertake or award other contracts for additional work, and the Contractor shall fully cooperate with such other contractors or Government employees. The O&M Contractor shall be responsible for entering work related data in the NCMMS performed by other contractors (e.g., elevator services and janitorial). The Contractor shall carefully schedule its own work, in conjunction with the additional work, as shall be directed by the CO or designee. In addition, the Contractor shall not commit or permit any act that shall interfere with the performance of work by another contractor or by Government employees.

C.1.13 Government Forms

The various Government forms mentioned in this PBWS, such as recording presence forms, and inspection forms, shall be obtained from the CO or designee.

C.1.14 Contractor Maintenance Performance Plans

This Contract requires in sections 5 and 6 that the Contractor provides specific plans to ensure efficient and effective operation of equipment and systems. Plans that are required by this Contract must be submitted per the specified schedule (see Exhibit 3) and shall be evaluated for completeness. Government approval is required before they are accepted and implemented. The Government reserves the right to require changes to the Contractor performance plans. All plans shall take into consideration the following:

- a. Peak performance - The system as a whole shall be considered when designing a performance plan.
- b. System longevity – Following the performance plan shall enhance the life of the equipment or a system and mitigate events that could shorten the life of the equipment or a system.
- c. Energy Conservation – The performance plan shall support energy efficiency and reduction goals as much as is practical. Also include ongoing Energy Savings Performance Contracts (ESPC).
- d. Conditioned space – The spaces served by the system shall be considered as to type and purpose in relation to system performance.
- e. Variability - The plan format shall consider the various configurations of the building(s) and their systems and use specific templates for the standard configurations such as systems in small remote locations, high rise structures or campus installations.

SECTION 2 DEFINITIONS

C.2.0 General

This section is a list of definitions to certain terms used in this PBWS.

C.2.1 Above-Standard Services

Above-Standard Services are services such as Overtime Utilities or Agency equipment repair and maintenance not covered in the monthly price of the Contract and is normally funded by the agency requesting such services.

C.2.2 Acceptance

“Acceptance” means an authorized representative of the Government has inspected and agreed that the work meets all requirements of this Contract, including all documentation requirements.

C.2.3 Additional Services

“Additional services” are services that the Contractor shall provide at an additional cost to the Government, including all labor, supervision, supplies and materials specifically identified as being outside the provisions of the basic services and pricing. The CO or designee shall issue a separate delivery order before work shall proceed.

C.2.4 Advanced Meters

Advanced meters are deployed in a building in addition to utility meters to measure and record interval data and communicate the data in a format that can be easily integrated into an advanced metering system.

C.2.5 Advanced Metering Systems

Advanced metering systems are a system that collects time-differentiated energy usage data from advanced meters via a network system on a request or defined schedule basis. The system is capable of providing usage information on a daily basis and can support desired features and functionality related to energy use management, procurement and operations.

C.2.6 Annual Child Care Facility Survey

Annual Child Care Facility Survey is an occupant safety inspection performed annually by the GSA Child Care Program Manager and Facility Manager (and sometimes the O&M contractor - that is the Facility Managers decision.)

C.2.7 Architectural and Structural

“Architectural and structural” systems include all building structure, envelope, building improvements and finishes, and site improvements (e.g., paving, walkways and, asphalt) to the property line.

C.2.8 Basic Services

Basic Services of the Contract consist of the recurring contract requirements for which the Contractor is paid as a base price, *i.e.*, the requirements established by the Contract, this PBWS and related general and administrative requirements that do not contain provisions for separate reimbursement. Indefinite Quantity services (Additional Services and Reimbursable Repairs) are requirements outside of Basic Services for which payment is made on a case-by-case basis.

C.2.9 Building Automation System (BAS)

The “building automation system” is a system controlling and monitoring building HVAC, and possibly other systems, including all BAS device, field and global controllers, instrumentation, networking infrastructure, computers and peripherals, software, programming, database files, and licenses.

C.2.10 Building Operating Plan

The “Building Operating Plan” (BOP) is a mandatory plan requiring Government approval that the Contractor either develops for new buildings or reviews and updates for existing facilities that documents the procedures for the operation of all the mechanical and electrical equipment and systems covered by this Contract under normal circumstances and emergency contingencies.

C.2.11 National Computerized Maintenance Management System (NCMMS)

A “computerized maintenance management system” is a database and application software package that automates the O&M and repairs record keeping requirements. GSA’s National Computerized Maintenance System (NCMMS) is designed to enhance efficiency and effectiveness of service and maintenance activities. Typical features include planning, scheduling and monitoring of service Work Orders and maintenance. The NCMMS is a central repository (Database) for all service requests and maintainable GSA assets. The NCMMS provides a mandatory, agency-wide means and method for processing, analyzing and reporting all service and maintenance work, equipment, costs, and labor hours for all of GSA.

C.2.12 Consumable Parts

“Consumable parts” are parts or components that customarily require regular replacement rather than repair in a maintenance program and shall be disposed of properly. Examples include: oil, grease, belts, filters, ballasts, and lamps.

C.2.13 Contracting Officer (CO)

Contracting Officer (CO) is a GSA employee who that has the overall responsibility for the administration of this Contract. The CO alone, without delegation, is authorized to take actions on behalf of the Government to amend, modify or deviate from the Contract terms, conditions, requirements, specifications, details and delivery schedules. The CO shall delegate administration of the Contract to a Contracting Officer’s Representative.

C.2.14 Contracting Officer's Representative (COR)

Contracting Officer's Representatives (COR) shall be appointed by letter from the CO. CORs or designees shall be the primary Government representatives for the administration of Contract, shall have proper training and experience in inspecting contracts, but shall not have the authority to modify the Contract.

C.2.15 Contractor

"Contractor" as used in this PBWS refers to the company or firm awarded this Contract.

C.2.16 Core Coverage Hours

"Core coverage hours" are the hours when the Contractor is required to maintain Basic Services.

C.2.17 Corrective Maintenance

Corrective Maintenance is a term from the NCMMS tool that refers to any activity that is not previously scheduled per industry standards, the PBS-P100 Design Standard, PBS 2012 (or most current) Preventive Maintenance Standards, or other referenced standards. The term includes service calls, equipment problems, minor repairs or unscheduled maintenance activities.

C.2.18 Demand Response Program

Demand Response Program is a load management program that usually offers the Government incentives to curtail energy demand during peak use periods to protect system reliability or respond to market conditions. This program requires that the Contractor perform specific requirements to satisfy the curtailment request (e.g., using onsite generation, switching to different fuels, or turning off excess equipment).

C.2.19 Emergency Callback

An "emergency callback" is a Work Order for service placed outside of Normal Working Hours and of such a nature that response cannot wait for the resumption of the next day's a Normal Working Hours. An emergency creates a life/safety hazard or immediate loss or damage of Government property and the event can disrupt the routine operation of the building, thereby preventing the tenants from working or the building from being secured.

C.2.20 Environmentally Sustainable Products and Services

Products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison shall consider raw materials acquisition, production, manufacturing, products and chemicals, packaging, distribution, reuse, operation, maintenance, or disposal of the product or service. Attributes of environmentally sustainable products or services include those that are energy efficient, greenhouse gas reducing, water-efficient, biodegradable, environmentally preferable, non-ozone depleting, contain recycled content, non or less toxic, EPA-designated and bio-based.

C.2.21 Exterior

The exterior is the area from the building or facility extending to the legal property line.

This includes but not limited to entrances, landings, steps, sidewalks, parking areas, arcades, courts, planters, lawns, irrigation systems, fountains, playground, security bollards, guard booths, gates, fences, flagpoles, building-mounted poles, and ground lighting located adjacent to the facility.

C.2.22 Fire Protection and Life Safety Systems

“Fire protection and life safety systems” are systems and equipment installed in the building to: detect fire and products of combustion, notify building occupants and emergency responders, initiate smoke control systems, initiate fire suppression systems, control or suppress fires and facilitate or enhance emergency egress. These systems also shall communicate with other major building systems for fire and smoke control, elevator recall and utilities control.

C.2.23 GSALink

GSALink is a strategic software analysis platform to leverage automated building analytics technology to capture real-time building systems point data, apply rules-based analytics software to the data and spot trends and deficiencies while reporting actionable events via the NCMMS as a Work Order to building operators, O&M Contractors, and GSA Service Center Facility Managers.

C.2.24 Green Procurement Compilation (GPC)

The GPC specifies requirements to use environmentally sustainable products and services.

C.2.25 Indefinite Quantity

“Indefinite quantity” provisions in a Contract permit the Government to order work, in addition to the Basic Services, and upon acceptance permit additional payment to the Contractor.

C.2.26 Initial Deficiency Report

The “Initial Deficiency Report” is a listing of the deficiencies that exist in the equipment and systems covered by this PBWS, as well as the Contractor's itemized price (including, labor, materials, overhead, and profit) for correcting each deficiency. Initial Deficiency Report findings are logged in NCMMS.

C.2.27 Miscellaneous Work

“Miscellaneous work” is additional labor, in addition to PM and equipment maintenance, that is performed at the direction of the COR or CO (*i.e.*, they are part of Basic Services). The Contractor shall also provide consumable materials to complete the request. Miscellaneous work is treated as a Service Call and is included in the Basic Operations and Maintenance price quoted per month on the bid sheet. During normal duty hours, minor requirements are considered "miscellaneous work" as it relates to routine, day-to-day operational requirements requested by the tenant in making door keys, changing locks, hanging pictures, maps and bulletin boards, trimming door bases, and other similar functions, as

directed. Miscellaneous work shall be accomplished in the same time frame as routine service calls, unless otherwise directed by the CO or designee.

C.2.28 Modification of Contract

A modification is a change to the terms and conditions of the Contract. In accordance with FAR 52.212-4(c) – Changes, the parties must agree to any changes to the terms and conditions of the Contract via a written modification to the Contract signed by the Contractor and the CO. Notwithstanding the foregoing, the CO may modify the period of performance of the Contract via a unilateral modification, *i.e.*, without the consent of the Contractor, in accordance with FAR clause 52.217-8, Option to Extend Services, and FAR clause 52.219-9, Option to Extend the Term of the Contract, both of which are included in this Contract.

C.2.29 Non-Reimbursable Repairs

A “non-reimbursable repair” is a repair that is the Contractor’s responsibility with no additional reimbursement from the Government.

C.2.30 Normal Working Hours

“Normal Working Hours” are the hours of building occupancy by the tenants (typically 10 hours) when all services shall be available to occupants.

C.2.31 Occupant Emergency Plan (OEP)

The lead agency (the largest agency in the building) in each building is responsible for development and enforcement of the building’s “Occupant Emergency Plan” (OEP). The OEP details what the building tenants shall do in case of an emergency. The plan identifies floor wardens and shelter in place locations.

C.2.32 Ongoing Commissioning

A facilities management and technical approach designed to resolve operating problems, improve comfort, optimize energy use, and identify retrofits for existing buildings using data from multiple systems (*e.g.*, BAS, advance meters and GSALink). This process can identify equipment inefficiencies as they occur and allow for quick remediation and greater energy and cost savings.

C.2.33 Open Protocol Systems

The Contractor shall use an open source computer operating system typically composed of coordinated modular components from a number of sources and not reliant upon any proprietary elements. Characteristics of open protocol systems include the exposure of the source code, which is thus available for understanding and possible modification and improvement, portability, which allows the system to be used in a variety of environments, and interoperability, which allows the system to function with other systems. “Open” applies to communication protocols, software and business practices.

C.2.34 Operations

“Operations” is the continual process of using building equipment systems to accomplish their function, optimize building performance and improve energy efficiency. Operations includes analysis of requirements and systems capabilities, operating controls and control systems, responding to Work Orders, touring and observing equipment performance and condition, adjusting equipment, identifying needed maintenance and repairs to equipment, and maintaining lubrication and chemical treatments.

C.2.35 Overtime Utilities

“Overtime Utilities” (OTU) are utilities and services that are outside Normal Working Hours and are funded by tenant agencies. Contractor support for OTU shall be considered an Additional Service and shall be on a separate requirements Order. OTU are scheduled and approved in advance to provide lights and, HVAC beyond Normal Working Hours.

C.2.36 Partnering

Partnering is a formal management process in which all parties to an endeavor agree at the outset to provide an effective problem-finding/problem-solving management team, composed of personnel from both parties, thus creating a single culture with one set of goals and objectives. Partnering also requires the recognition that risks and accountability shall be shared by both parties and that maintaining a healthy partnership is everyone's responsibility. The outcome of this initiative is for GSA to leverage Contractor technical, managerial and decision making expertise to assist GSA in accomplishing the Contracts performance goals and objectives.

C.2.37 Performance Based Work Statement (PBWS)

The Performance Based Work Statement details the work requirement and can be referred to as the specification.

C.2.38 Predictive Maintenance

Predictive maintenance is a program of maintenance activities in which scheduling of maintenance is derived from monitoring the operating condition, or changes in the operating condition, of equipment being maintained.

C.2.39 Preventive Maintenance

Preventive maintenance is a program of scheduled maintenance activities performed based on a fixed schedule or on equipment runtimes.

C.2.40 Quality Assurance Surveillance Plan (QASP)

The QASP is the Government's surveillance and assessment method of monitoring and evaluating the Contractor's performance.

C.2.41 Quality Control Plan

The Quality Control Plan (QC plan) is the Contractor's complete written system for identifying and correcting deficiencies in the quality of services to prevent the level of performance in operations from becoming unacceptable or negligent.

C.2.42 Rapid Building Assessment Program

The Rapid Building Assessment Program is an electricity and water assessment program conducted by a third party, which provides features that allow GSA staff to improve electricity and water efficiency for assets that have access to interval electricity and water metering. It uses proprietary statistical methods and advanced data analytics to provide building-specific performance benchmarks for electricity and water savings.

C.2.43 Repair

A "repair" is an act of restoring inoperable, dysfunctional or deteriorated equipment, systems or material to a fully functional, non-deteriorated state. Repairs involve some combination of labor and repair or replacement of the equipment, parts, components or materials.

C.2.44 Reimbursable Repair

A reimbursable repair is a repair that is reimbursable to the Contractor, in whole or in part, in accordance with the provisions of the PBWS.

C.2.45 Tour

A tour is generally a scheduled inspection of equipment rooms and installations including computer rooms and, restrooms by Contractor operating personnel for the purpose of ensuring that equipment is running properly, ensuring that equipment rooms are in good order and without safety hazards, and making any necessary adjustments to operating controls or to lubricate equipment. A tour inspection can be a combination of physical visits and automated systems for the monitoring of equipment and systems. Operating logs and tour sheets are a part of the tour program plan.

C.2.46 Vertical Transportation Systems

Vertical transportation systems are designed to transport persons or materials between two or more levels in a vertical direction, which commonly includes elevators, escalators, dumbwaiters, and lifts.

C.2.47 Watch

A watch involves performing certain requirements required for the operation of the HVAC equipment (central systems over 300 tons), boilers, compressors, and related equipment in a centralized location. Watches include, starting equipment, checking at designated intervals all operating equipment in the area, recording readings, shifting equipment and loads, making adjustments at the central control center, taking water samples, making tests, and adding chemicals, as required.

C.2.48 Work Order

A Work Order (Work Request/Work Order) is a documented response entered into the NCMMS to a request by GSA, the tenant or a Contractor's observation that some equipment, system or material covered by the Contract is inoperable, dysfunctional, deteriorated, or not within normal operating parameters, or that the performance standard of the Contract is not being met. Work Order response involves analysis of the problem and adjustment of operating or monitoring controls or other immediate corrective action. Work Orders may be generated automatically from interfaces to BAS, central communications service or diagnostic software.

SECTION 3 GOVERNMENT-FURNISHED PROPERTY

[[[Note to Spec Writer: Regions shall add items as appropriate. Delete items not applicable to your facilities, as appropriate; e.g. phone lines, fax machines, computers, copiers, software.]]]

C.3.0 General

The Contractor or the Contractor's employees shall not use Government property in any manner for any personal advantage, business gain, or other personal endeavor. The Contractor will take appropriate precautions to safeguard and protect from damage, theft or misuse government furnished equipment. Government furnished property lost, stolen or damaged due to Contractor neglect shall be replaced at the expense of the Contractor.

C.3.1 Electric Power

The Government shall provide electrical power at existing outlets for the Contractor to operate equipment that is necessary in the conduct of its work.

C.3.2 Water Source

The Government shall provide hot and cold water as necessary, limited to the normal supply provided in the building. No special heating or cooling of the water shall be provided.

C.3.3 Contractor Office Space and Furnishings

The Contractor may use space in the building and furnishings, including locker rooms and lockers (not a part of any tenant rentable or commonly accessible areas) if available with permission from the CO or designee. Any existing equipment within GSA space, such as lockers, tables, benches, chairs, and appliances may be used by the Contractor during the term of the Contract, provided written authorization is received from the CO or the designee. Space in the building, furniture and furnishings, and equipment for Contractor use (including a supervisor's office) is to be used for official business only in the performance of this Contract. If the Government supplies telephones, they shall only be used for communication related to the Contract. Allocated space, furnishings and equipment shall be kept neat and clean and returned to the Government at the expiration of the Contract in reasonably the same condition as at the time of entering into the Contract. The Government retains the right to change permission for use of space and furnishings throughout the life of the Contract.

C.3.4 Storage Space

Space will be provided in the building for the storage of supplies and equipment that is to be used in the performance of work under the Contract. The Contractor shall maintain this space in a clean, neat and orderly condition. Contractor must store all flammable or combustible liquids in a UL- rated flammable storage cabinet or inside storage room as indicated in 29 C.F.R. 1910.106(d) and NFPA 30. The Government shall not be responsible in any way for damage or loss to the Contractor's stored supplies, materials, replacement parts, or equipment.

C.3.5 Network Equipment and Computer Hardware

[[[Spec. Writer shall need to determine GSA responsibility in this subsection and revise.]]]

Government-furnished network equipment and computer hardware shall be used in all cases for PBS IT systems. Network equipment- includes any equipment that has IT routing and switching functionality.

- Computer hardware includes PCs, laptops, and their peripherals (monitors, microphones and keyboards).
- Proprietary system hardware/software can be Contractor provided, but is subject to network and system testing, review and approval for connection to GSA's network and acceptance of the GSA IT.

Government-Furnished Equipment – GSA IT shall provide one laptop to newly integrated (to the GSA network) BAS sites for the purpose of giving all users access to the building monitoring and control systems. Please note availability of hardware is dependent on the availability of budgeted funds dedicated for this purpose, which may or may not be renewed on an annual basis. Existing GSA workstation refreshes shall still be coordinated through the regional Office of the Chief Information Officer's office. No hardware (workstations, servers, switches) shall be provided unless an approved network diagram is submitted.

[[[Note to Spec Writer: If the Government provides a desktop or laptop for the purposes of NCMMS please include this additional computer in this subsection.]]]

SECTION 4 CONTRACTOR- FURNISHED PROPERTY SUPPLIES/MATERIAL/EQUIPMENT

C.4.0 General

The Contractor shall provide all labor, services, supplies, material, and equipment necessary to perform efficiently and effectively the requirements of this Contract, except as explicitly stated within this PBWS. At the expiration or termination of this Contract, all equipment furnished and installed by the Contractor in the building shall remain and become the property of the Government. All electronic data used to operate, track and maintain the facility remains the property of the Government and must be turned over to the Government in an electronic media identified by the Government. All non-electronic media used to operate, track and maintain the facility remains the property of the Government and must be turned over to the Government in good condition upon request or upon the completion of the Contract.

C.4.1 Specific Requirements

The items listed below shall meet the standard or characteristic specified: The Contractor shall provide at its sole expense an onsite computer with broadband Internet service for the purpose of receiving and documenting Work Orders and other Contract data via NCMMS.

[[[Note to Spec Writer: If the Government provides a computer for NCMMS please delete 4.1.]]]

SECTION 5 OPERATIONS-SPECIFIC REQUIREMENTS

C.5.0 General

The Contractor shall provide building operations services for all systems covered by this Contract, maintain uninterrupted utilities services, and environmental conditioning to tenants during Normal Working Hours, and at other times as described in this PBWS, to preserve the asset value of the facility and its systems, and minimize operating costs to the Government without compromising other Contract objectives or requirements.

C.5.1 Tenant Environment

In accordance with Federal Management Regulations sections 102-74.185 and 102-74.195, respectively, the Contractor shall meet ASHRAE Standard 55-2017 (or latest version, if superseded), Thermal Environmental Conditions for Human Occupancy, and ASHRAE 62.1-2016 (or latest version, if superseded), Ventilation for Acceptable Indoor Air. The Contractor shall maintain these standards throughout the Normal Working Hours in occupied spaces. Equipment startup shall occur efficiently to attain fully environmental conditions at the beginning of Normal Working Hours. The Contractor shall comply with ASHRAE Standard 55-2017 (or latest version if superseded) to achieve temperature settings between 72°F and 78°F in the summer months and between 69°F and 75°F in the winter months. These recommended temperature settings apply to the entire building not individual offices. The Contractor shall report significant changes in the operating conditions to the CO or designee. If the standards (*i.e.*, ASHRAE Standards 55 and 62) cannot be met the Contractor shall submit a deviation by in writing, to the CO or designee for approval.

C.5.1.1 Tenant Furniture

Tenant agency furniture and office equipment in the Contractor's immediate work area shall be moved and protected by the Contractor and returned to its original location once work is completed. If the Contractor's work does not allow furniture and office equipment to be replaced to its original location, new locations will be designated by the COR or the tenant agency representative or point of contact. The Contractor is responsible for repair or replacement due to damage as a result of moving tenant furniture or office equipment.

C.5.2 Building Operating Plan

[[[Note to Spec Writer: It is understood that updates are required and the Spec Writer shall add or delete items as long as the contents listed in 5.2.1. remain intact.]]]

In existing facilities the Contractor shall review and update the Building Operating Plan (BOP) and submit for approval to the CO or designee, not later than the end of the startup or transition phase outlining the operating and general maintenance procedures for all major building equipment and systems. The Contractor shall coordinate with the CO or designee in developing the components of the plan in accordance with the BOP template provided by the CO or designee.

In newly constructed buildings without a BOP, the Contractor shall develop a BOP that includes all O&M equipment and systems. The purpose of the BOP is to document the standard O&M procedures for the building. An additional objective of this plan is that if key personnel are not

available then authorized and qualified staff shall be able to refer to the BOP and manage and operate the building. The BOP contains critical information such as: who to contact, emergency procedures, demand response, hours of operation, locations of emergency shut off valves, confined entry space inventory, hazardous chemicals, the location of OEP, Continuity of Operations Plan (COOP), drawings, and equipment Inventory. The Contractor shall execute the Contract requirements in accordance with the approved BOP. The BOP must be submitted as an electronic file (MS Word or Google.doc) with regular updates that reflect current personnel, subcontractors, equipment, systems, and operating procedures, and entered in the NCMMS. The Contractor shall revise as needed and annually review and update the BOP and submit to the CO or designee an electronic file (MS Word, Google.doc) of the complete updated BOP on the anniversary of the Contract start date of each Contract year. If the Contractor fails to submit a satisfactory BOP the Government shall withhold payments until a satisfactory plan is submitted.

C.5.2.1 Components of the Building Operating Plan

[[[Note to Spec Writer: Regions may add items. It is important that the CO or designee provide the necessary information to the Contractor to complete the BOP, such as OEP, COOP, drawings. A copy of BOP template can be found at: [Operations and Maintenance Specification](#).]]]

The components of the BOP are compilation of requirements stated throughout the O&M PBWS. Most of the information and documents shall be provided by the CO or designee to complete this plan, such as OEP and COOP and drawings. At a minimum, the Contractor is responsible for providing the following information within the BOP:

- a. Contact information of local Contractor staff and corporate managerial staff.
- b. Description of staffing, responsibilities and work schedules.
- c. Identify personnel with QCP functions and the personnel with authority to commit funds, and the dollar level of that authority for this Contract.
- d. Standard operating procedures for operating building systems, including at a minimum:
 1. Startup and shutdown times and procedures relative to various environmental conditions.
 2. Facility hours of operation – Normal and Core hours.
 3. Procedures to accommodate tenant OTU requests. Provide listings of mechanical equipment, hours of operation and separate procedures for heating and cooling.
 4. Energy Conservation – Performance Plan, Management and Control Systems, peak load demand management procedures, and Advance Meter System (AMS) data for conservation strategies (if applicable).
 5. Other operating strategies to maximize efficiency and minimize energy consumption.
 6. Descriptions of major mechanical equipment, modes and sequences of operations for equipment systems such as schedules, settings, startups, shutdown and control sequences.
 7. Locations of all major utility shut off, including gas, electric, water and steam (if applicable).

8. Locations of all electric rooms and a narrative of the areas served by each including emergency generators, substations and transformers, and equipment that is on the emergency generator.
- e. Architectural and Structural systems maintenance (e.g., facade, roof, gutters, drains, and windows).
- f. Building tour plan and watch locations, recording presence and documentation procedures.
- g. Maintenance schedules and procedures, and a reference to which preventive or predictive maintenance standards or guides the Contractor shall use. For all fire protection and life safety systems PBS preventive maintenance guides shall not be used. The Contractor shall use the applicable NFPA code or standard (latest edition) to perform the inspection, testing and maintenance (ITM) of all fire protection and life safety systems. The Contractor shall perform all ITM in accordance with the frequency schedules and test methods in the applicable NFPA code or standard. All ITM performed must be recorded on the suggested ITM forms referenced in the applicable NFPA code or standard.
- h. List of test equipment to be maintained onsite to support troubleshooting and sensor calibrations.
- i. Vertical Transportation maintenance plan, if applicable, including escalators, elevators, and dumbwaiters.
- j. A description of how building equipment data is maintained and updated. Work Order and repair procedures, including staffing and procedures for the Work Orders, during operating hours, after hours and emergencies.
- k. A description of key control procedures.
- l. Safety, Security, Disaster Emergency Response, Recovery and Reporting Procedures. Reference the location or incorporate contingency plans for:
 1. Loss of the Contractor's onsite personnel (*i.e.*, strike, walkout, injury, abrupt resignation). At a minimum, the Strike Contingency Plan (SCP) shall include the following information:
 - a. Support Personnel: The SCP shall describe in detail how the Contractor shall staff the building to provide the services defined in this PBWS in the event of strikes by its employees. This includes HSPD-12 requirements.
 - b. License and Certifications: The SCP shall describe in detail how the Contractor shall provide personnel that meet experience requirements, assuring the Government that all temporary or replacement employees (including subcontractor employees) shall meet the experience and license requirements defined in this PBWS.
 2. Civil disturbance or major security threat.
 3. Natural disasters, bombing, or other events that damage the building's structure or utilities.
 4. Floods, including flooding caused by plumbing breaks.
 5. Hazardous materials including asbestos, lead paint, leaks or spills and water management.

6. Inoperability and impairment of fire protection and life safety systems (including fire watch and impairment procedures (e.g., red tags).
 7. Location of fire alarm control unit/fire control room/instructions to operate Public Address system in emergency, if applicable.
 8. Location of incoming municipal fire protection water supply.
 9. Location of fire sprinkler riser rooms and isolation valves.
 10. Location of fire pump.
 11. Location of sump and sewage ejector pumps and emergency procedures.
 12. Pressure booster and reducing stations, and backflow preventers.
 13. Above and Underground Storage Tanks.
 14. Confined Space Locations.
 15. Portable Fire Extinguisher Locations.
 16. Radon mitigation program, if applicable.
 17. Description of safety procedures.
- m. Contractor contingency plans to operate the building in support of the Government's COOP, OEP, loss of connectivity of the BAS, Shelter in Place, and Pandemic Influenza Preparedness planning for the site.
 - n. Description of environmental regulatory requirements, such as Air Quality Management District and include rules that apply to equipment in the building, which permits are necessary, inspection and certification requirements, and other essential information. Identify how the administrative and technical requirements shall be managed for the timely accomplishment of all Contract requirements.
 - o. Contractor plan to support demand response or utility curtailment programs in which the building participates, including communications protocols and curtailment activities. The Contractor shall provide in its contract an estimate as a separate line item for performing curtailment activities.
 - p. The Contractor shall develop and implement a written emergency plan that describes procedures for its employees to follow during power failures, equipment failures, or other emergencies within 30 calendar days of Contract start date. The Contractor shall also review with its employees those parts of the plan necessary to protect workers in emergencies.

C.5.3 Equipment Inventory

[[Note to Spec Writer: If there is not totally accurate inventory consider including an RFP, if funding is available, to provide additional time for the Contractor to correct.]]]

C.5.3.1 General:

The Contractor shall maintain and update as required the building equipment inventory, equipment labeling and maintenance records to ensure accurate data in the NCMMS for building operations. Changes in the inventory can result in a negotiated price adjustment to the Contract, which must be approved, in writing, by the CO. Omissions in the existing inventory do not relieve the Contractor from the responsibility for the maintenance and repair of the equipment. The Contractor may request an equitable adjustment pertaining only to physical changes in building equipment which occur after the contract start date. This request shall be

submitted to the CO or designee for consideration. If the contractor maintained inventory data does not meet Contract requirements (up-to-date, required equipment information) the CO will take action to withhold payments.

C.5.3.2 Operations

The Contractor shall:

- a. Collect and maintain an inventory of: (1) all equipment of types that require maintenance or certifications pursuant to the PBS Maintenance Standards or applicable NFPA code or standards (latest edition), (2) equipment that is operated through a sequence of operations, (3) electronic controllers and network devices, (4) sensors, and (5) tenant agency-owned equipment operated or maintained.
- b. Collect and maintain the following equipment/system data including all applicable fire protection and life safety equipment/system data: Equipment ID, Equipment Type, Equipment Description, Asset Identification Code, all Nameplate data, Manufacturer, Model Number, Serial Number, Equipment Status, Building Number, Location (including floor, room, and location description) and install/initialization dates (as can be obtained from nameplate or manufacturer data available). For fire alarm systems, the Contractor shall also provide the current version of fire alarm software and the version of software for any systems with which the fire alarm software interfaces. A digital photo of the manufacturer's nameplate shall be entered into NCMMS if no current photo is recorded and stored in NCMMS.
- c. Maintain or implement same asset identification system for new and replacement equipment compliant with NCMMS-readable national asset identification coding. Some asset identification systems include bar-coding, Radio Frequency identification or other equipment tagging.
- d. Update equipment data when equipment is added, removed or retrofitted as part of a project, or discovered by GSA or the Contractor and log changes in accordance with provided NCMMS training.
- e. Review and update equipment records, including asset information, maintenance records and preventive maintenance records, anytime maintenance is performed on a piece of equipment.
- f. Use the workflow processes within NCMMS or alternate means approved by the CO or designee, to submit changes to the equipment inventory and preventive maintenance schedule within five business days of collecting and gathering equipment information and updating in NCMMS. All changes to equipment inventory and preventive maintenance schedule must be approved by the CO or designee.
- g. For assets covered by an ESPC contract, check the "ESPC" box on NCMMS Asset page; collect and maintain ESPC contract information. **[[[Note to Spec Writer: Remove if not applicable.]]]**

C.5.3.3 Reporting

The Contractor shall:

- a. Provide all data to GSA in the NCMMS with certification that the inventory is complete and accurate.

- b. Annually certify that the Maintained Equipment Inventory is up-to-date and submit the certified inventory to the CO or designee.
- c. Contractor shall annually submit to the CO or designee an itemized equipment condition assessment with its recommendation for equipment or system upgrades or replacements (that has reached end of their life cycle), including a text description of each recommended upgrade or replacement and its life-cycle cost analysis including estimated project cost. The equipment condition assessment reports shall be produced in NCMMS and submitted electronically as an email attachment to the CO or designee.

C.5.4 Safety Management

C.5.4.1 General

The Contractor shall comply with all applicable Federal, state and local laws and regulations that relate to the maintenance and operation of equipment and systems within the scope of this Contract including: permitting, plans, inspection, personnel safety, control of hazardous substances, certification, recordkeeping and training. Contract personnel shall wear proper personal protective equipment (PPE) to meet OSHA standards where required. Throughout the Contract period, the Contractor shall keep current and be aware of any changes in regulations and requirements and update its operations and training as necessary.

The Contractor shall immediately correct or mitigate any recognized safety or environmental hazard. The Contractor shall notify the COR, other designated Government representative, or appropriate authority if applicable. The Contractor shall be responsible for any fines or penalties levied by any environmental or regulatory authority resulting from its action or inaction, (but not actions or inactions of a third party or the Government).

C.5.4.2 Workplace Safety and Health Program

The Contractor shall develop a site-specific safety and health plan that specifically describes O&M work related to applicable safety programs required under 29 C.F.R. parts 1910 and 1926.

C.5.4.2.1 Reporting

The site-specific safety and health program shall be submitted to the COR or designee for review and approval within 30 calendar days of Contract start date. By approving the program, GSA assumes no responsibility for the Contractor's occupational safety and health program.

C.5.4.3 Scheduling and Record Keeping

The Contractor shall maintain copies of all tests, certifications, permits and other required records.

C.5.4.3.1 Reporting

All required safety tests, certifications, permits, plans, and other procedures required in this PBWS shall be scheduled in the NCMMS Work Order system and documented in the NCMMS.

C.5.4.4 Fall Protection

The Contractor must provide fall protection equipment to its employees and all employees must be adequately trained in accordance with 29 C.F.R. 1910.28 and 1910.29. The Contractor shall develop specific fall protection procedures for work on roofs, equipment, and other areas at elevation.

C.5.4.5 Powered Platforms

The Contractor shall inspect, test, and maintain all federally owned permanently installed powered platforms in accordance with 29 C.F.R. 1910.66, and provide copies of such certifications to the COR. Aerial and scissor lifts, if used, must be inspected before each use in accordance with 29 C.F.R. 1910.67 (c) (2) (i) and the manufacturers specifications.

C.5.4.6 Lock Out/Tag Out

The Contractor shall adhere to 29 C.F.R. 1910.147 lock out/tag out procedures. The Contractor's lock out/tag out procedures shall be developed and submitted to the CO or designee within 30 calendar days of Contract start date. Contractor shall communicate the lock out/tag out procedures to all employees and other affected Contractors.

C.5.4.7 Confined Spaces

The Contractor shall evaluate, identify and label all confined spaces in accordance with OSHA standards 29 CFR 1910.146. The Contractor shall develop a confined space entry permit system for all permit-required confined spaces within 60 calendar days of Contract start date.

C.5.4.8 Facility Hazards and Accidents

The Contractor shall take immediate action to report accident and control hazards that present an imminent danger.

C.5.4.8.1 Hazards

The Contractor is responsible for ensuring safe working conditions and identifying hazards that exist in the work environment. When the Contractor identifies any hazardous work condition, regardless of cause, the Contractor is responsible for protecting its employees from that hazard and correcting hazards under its control. Hazards not under the control of the Contractor, as well as all hazards that present an imminent danger, must be reported immediately to the CO.

C.5.4.8.2 Accidents

The Contractor shall immediately notify and provide copies of all accident reports to OSHA and to the CO or designee.

C.5.4.9 Disruptive or Hazardous Equipment

C.5.4.9.1 Tools

The CO or designee shall approve in advance the use of impact tools and power-actuated tools during Normal working Hours. Burning or welding equipment shall be used only with written permission from the facility management office or CO or designee. A Welding and Burning Permit (GSA Form 1755 or equivalent) shall be issued in advance for each day welding or burning is performed. Compress gas cylinders must be stored in accordance with 29 C.F.R.1910.101 and welding in a confined space requires specific confined space permitting requirements.

C.5.4.9.2 Hooks, Cranes, Hoists Chains and Slings

The Contractor shall inspect before each use and follow the inspection requirements in 29 C.F.R. 1910.184 and 1910.179 and ANSI B.30.10 as needed. Items that are defective shall be removed from service. The rated loads shall be listed on the devices.

C.5.4.10 Scheduled Disruption to Utilities, Lighting, Fire Protection & Life Safety Systems, or Space Conditioning

Any work that will disrupt utilities, fire protection and life safety systems, lighting or space conditioning for building tenants must be scheduled and approved in advance by the CO or designee and generally must be performed outside of Normal Working Hours.

C.5.4.11 Safety Data Sheets and Hazard Communication Plan

C.5.4.11.1 Safety Data Sheets

The Contractor shall make Safety Data Sheets (SDS) available to its employees in accordance with 29 C.F.R. 1910.1200 and upon request to the COR or designee.

C.5.4.11.2 Hazard Communication Plan

The Contractor shall develop a written Hazard Communication Plan in accordance with 29 C.F.R. 1910.1200 as part of its overall Health and Safety Program. The written plan applies to any hazardous chemical present in the area where the Contractor is working and to which the Contractor is or may be exposed to, under normal conditions of use. The plan must include the method the Contractor will use to provide other employers that shall also be exposed to the hazardous chemicals, knowledge of the locations where the Contractor's SDSs are kept and how access by other employers can be obtained. The Contractor shall prepare and submit a hazardous materials inventory as an appendix to the BOP and Hazardous Communication Plan. This inventory shall itemize all materials by type as sold with an SDS and include approximate quantities stored or to be stored as well as the exact locations where hazardous materials are to be stored on the premises and the date the material was stored. The inventory must be kept current and submitted annually by September 30 of each year and at the end of the Contract.

C.5.4.12 Labeling and signage

The Contractor shall maintain the labeling of existing equipment, pipes, storage areas, containers, confined space, and workspaces as well as associated signage, in accordance with OSHA standards to ensure labels are visible and easily readable. Any equipment, pipes, and other materials, newly installed by the Contractor that require labeling and signage per OSHA standards shall be labeled immediately upon completion of the installation and maintained throughout the Contract period.

C.5.4.13 Emergency Shutdown Instructions

Emergency shutdown instructions (including contact name and telephone numbers) and tour inspection checklists and Lock-Out-Tag-Out procedures shall be posted by the Contractor in all mechanical rooms and electrical rooms, as applicable to the equipment in the given room. Such instructions and checklists shall be posted in an accessible and conspicuous location. All instructions and checklist must also be stored in the NCMMS.

C.5.4.14 Electrical Safety

The Contractor shall comply with NFPA 70: National Electrical Code and NFPA 70E: Standard for Electrical Safety in the Workplace, when working on or around electrical equipment or systems or switchgear equipment. The Contractor shall ensure that any and all areas restricted to qualified personnel are secured and properly labeled.

C.5.4.15 Labeling of Electrical Circuits and Panels

[[[Note to Spec Writer: Regions may choose to modify or “Reserve” this requirement if labeling has not been maintained in a building and it would be prohibitively expensive to do the necessary circuit tracing to establish labeling.]]]

The labeling of the electrical circuits and panels shall be maintained up-to-date either in electronic format or hard copy blueprints when the Contractor adds or modifies electrical circuits. This requires the Contractor to implement and document an overall electrical safety program that meets the requirements outlined in NFPA 70E, Article 100 - General Requirements for an Electrical Safety Related Work Practice. The CO or designee shall ensure all recorded changes in electric panels from upgrades or renovations from the third party electrical work subcontractors are transmitted to the Contractor to maintain the accuracy of labeling. In the event the Contractor identifies a circuit through discovery, the Contractor must label the circuit in accordance with NFPA 70B.

C.5.5 Environmental Management

C.5.5.1 General

The Contractor shall use to the extent practicable, the safest and most environmentally friendly products and processes available. The Contractor shall use manufacturer recommended products. Before substituting for any manufacturer's recommended product, the Contractor shall ensure any the substitution is deemed safe by the equipment manufacturer. A resource to help ensure this objective is located at the web site in document titled “Web Links” at: [Operations and Maintenance Specification](#). The Contractor shall be cognizant of and comply

with all applicable Federal, state, and local laws and regulations related to building management (e.g., permitting, inspection, testing and personnel safety, control of hazardous substances, and certification) including those related to materials and associated systems used or removed in the performance of this Contract. The Contractor shall be responsible for any fines or penalties levied by any environmental or regulatory authority resulting from its action or inaction, (but not resulting from the actions or inactions of a third-party or the Federal Government). The Contractor's maintenance, operations, materials and processes must use green products and processes including products containing recycled content, environmentally sustainable products and services, bio-based products, and products and services that minimize the use of energy, water, and other resources. All required safety and environmental tests, certifications, permits, and other procedures required in this PBWS shall be scheduled in the NCMMS Work Order system.

C.5.5.2 Refrigerants

C.5.5.2.1 Operations

The Contractor shall comply with EPA section 608 regulations (40 C.F.R. part 82 under section 608 of the Clean Air Act) and associated state laws and regulations for refrigeration and air conditioning equipment. All HVAC mechanics performing repairs on refrigerated equipment shall possess a Universal Chlorofluorocarbon (CFC) Certification.

C.5.5.2.2 Maintenance (Refrigerant Recycling, Reclamation, and Disposal)

The Contractor shall evacuate refrigerant to EPA-specified levels, using a certified recovery and/or recycling machine, prior to disposing of refrigeration and air conditioning equipment. When disposing of refrigerants, the Contractor shall give preference to reclamation (to EPA-certified refrigerant reclaimers) as a method of disposal. The Contractor shall notify the CO or designee and obtain approval prior to selling or offering for sale used refrigerant evacuated from GSA equipment; and transferring recycled refrigerant between facilities for use in GSA equipment.

C.5.5.2.3 Testing/Inspections

The Contractor must maintain and test emergency devices and systems, such as refrigerant monitors, automatic leak detection systems, alarms and purge ventilation systems as part of the maintenance program. The Contractor must use appropriate media to test sensors as well as alarm circuitry. The Contractor shall calculate and document the leak rate every time refrigerant is added to equipment (unless the addition qualifies as a seasonal variance).

C.5.5.2.4 Reporting

The Contractor must immediately report refrigerant leaks, at or above a 10% leak rate, to the CO or designee and take corrective action to repair leaks prior to the EPA 30-day deadline in compliance with section 608 of the Clean Air Act. Repair of leaks shall be documented by both an initial verification test and a follow-up verification test.

C.5.5.3 Local Air Quality Management Operating Permits

The Contractor shall comply with the operating permit requirements of the Local Air Quality Management District (AQMD), and shall ensure operating permits for boilers; generators and other emissions-producing equipment regulated by the local AQMD are up-to-date and have copies available to the CO or designee via NCMMS immediately upon request. In the event of fines or penalties levied by an AQMD, the Contractor shall be charged the cost as a performance deduction under the Adjusting Payments clause. The Contractor shall submit emissions reports when required by the regulating entity.

C.5.5.4 Stationary Engines

The Contractor shall comply with all applicable Federal, state, and local regulatory requirements for the notification of compliance, periodic inspection, monitoring, permitting, certification, registration, maintenance, personnel training, recordkeeping and reporting for all regulated stationary engines. The Contractor must ensure compliance with New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines, 40 C.F.R. part 60, subpart IIII; NSPS for Stationary Spark Ignition Internal Combustion Engines, 40 C.F.R. part 60 subpart JJJJ, and National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating, 40 C.F.R. part 63 subpart ZZZZ.

C.5.5.5 Fuel Storage Tank Management

[[[Note to Spec Writer: Add any specific State requirements.]]]

The Contractor shall comply with GSA Order 1095.2 PBS. "Fuel Storage Tank Management" and all applicable Federal, state, and local regulatory requirements for the periodic inspection, monitoring, permitting, certification, registration, maintenance, personnel training, and recordkeeping for underground and aboveground storage tanks. Where GSA policy and regulatory requirements differ regarding fuel storage tank management, the more stringent directive shall apply.

C.5.5.6 Solid Waste

[[[Note to Spec Writer: Remove if contracted out separately]]]

The Contractor shall provide solid waste and recycling disposal services as needed and in accordance with the Resource Conservation and Recovery Act (RCRA) Subtitle C Hazardous Waste and Subtitle D Non-Hazardous Waste, associated EPA regulations (including 40 CFR Part 246), state and local recycling mandates, Executive Order 13834, and applicable GSA/PBS guidance provided by the COR. The Contractor shall aim to meet a minimum fifty percent (by weight) waste diversion target, to support achievement of GSA sustainability targets. The Contractor shall manage (handle, transport, collect, and dispose) non-hazardous construction and demolition (C&D) waste separately from municipal solid waste (trash). Recycling, composting (where feasible), and other alternatives to landfills and incineration are the preferred methods for disposal of all solid waste (C&D and trash).

C.5.5.7 Polychlorinated Biphenyl (PCB) Control

[[[Note to Spec Writer: If there are no PCBs, delete this subsection]]]

The Contractor shall inspect all transformers containing polychlorinated biphenyls (PCBs) and maintain records of such inspections in accordance with state, local, and EPA regulations. The CO or designee shall be notified immediately if any such equipment is found to contain PCBs, or suspected to contain PCBs. Equipment verified to contain PCBs, except lighting ballasts, shall be labeled as containing PCBs. Any transformer leaks of PCBs shall be reported immediately to the CO or designee. The Contractor shall inspect all leaks in accordance with state, local, and EPA regulations. The Contractor shall properly dispose of caulk that contains PCBs. The Contractor shall take immediate action to contain all leaks.

C.5.5.8 Asbestos Management

[[[Note to Spec Writer: Remove if there is no possibility that asbestos ever existed in this facility. In cases where asbestos has a major impact on the ability to access equipment, Regions shall want to provide additional information for the Contractor along with the location of the Government Asbestos Management Plan.]]]

The Contractor shall be expected to perform, on occasion, Class III and Class IV asbestos work as defined in 29 C.F.R. 1926.1101. The Contractor shall be prepared to deal with asbestos on a small-scale, short-duration basis to effect emergency repairs and to clean up small spills. The Contractor shall protect building tenants, visitors, and employees from asbestos exposure. The Contractor shall comply with applicable OSHA regulations and all applicable Federal, state, and local asbestos regulations. The Contractor shall immediately become familiar with, comply with, and recommend any appropriate changes to the Government Asbestos Management Plan for the building. If the Contractor disturbs materials its suspects may contain asbestos, the Contractor must immediately report the condition to the CO or designee. Contractor personnel who perform the above-mentioned work must have the appropriate training in accordance with 40 C.F.R. part 763, and the Contractor shall provide training records to demonstrate compliance, including respirator suitability medical and fit test reports with Personal Identification Information removed.

C.5.5.9 Disposition of Hazardous Waste

[[[Note to Spec Writer: Facility Managers are the ones who will need to sign the manifest for transportation of HazMat from a facility.]]]

The Contractor shall ensure that on-site hazardous waste management is compliant with all regulatory accumulation requirements (e.g., hold times, marking/labeling and container management). All Hazardous and Universal Waste shipping documentation shall be maintained for the life of the building. Universal Wastes (*i.e.*, fluorescent lamps, batteries, certain pesticides, and mercury-containing equipment) in quantities subject to Federal and State Universal Waste Rules (40 C.F.R. part 273) shall be recycled or disposed of as Hazardous Waste. Preference is given to recycling of intact items. Hazardous Wastes not subject to the Universal Wastes Rule shall be managed in accordance with all applicable parts of 40 C.F.R. part 260. As co-generators, the Contractor and Government mutually agree that the Contractor shall perform generator duties on behalf of both parties. Generator requirements include to

hazardous waste generation, handling, accumulation, shipment and disposal, and also include exception reporting as required. The Contractor must include the disposition of Hazardous and Universal Waste as a Work Order in NCMMS with documentation attached.

C.5.5.10 Backflow Prevention Devices

The Contractor shall maintain all existing backflow prevention devices and certify them as prescribed by applicable Federal, state, and local laws, ordinances, and regulations. If no local requirement exists, a certified inspector shall inspect all existing backflow prevention devices on an annual basis, record the inspection as a Work Order in the NCMMS and provide certification of proper operation to the CO or designee. A copy of the certification shall be posted at all backflow prevention devices. While the Federal Government shall generally pass on to the Contractor backflow testing notices received from local water districts or other local authorities, the Contractor is responsible for timely completion and submission of such test results regardless of receipt of such notices. In addition to other requirements, backflow prevention devices used on water-based fire suppression systems shall be inspected, tested, and maintained in accordance with NFPA 25.

C.5.5.11 Potable Water Systems

The Contractor shall comply with The Safe Drinking Water Act, PL 99-339, as amended, and the U.S. Environmental Protection Agency Safe Drinking Water regulations (40 C.F.R. 141.43, sections A and D), which address the quantity of lead allowable in new installations or repairs to existing drinking water systems and plumbing. Potable water systems that are repaired, modified, serviced, or breached in any way shall be disinfected and flushed as needed prior to returning the system to service. The Contractor is required to comply with all applicable Federal, state, local codes, GSA Order PBS 1000.7- Drinking Water Quality Management and the PBS Desk Guide for Drinking Water Quality Management, in the operation, treatment, and testing of potable water systems.

C.5.5.12 Reporting

The Contractor shall provide all necessary information required in this subsection to comply with environmental and reporting requirements, and agency sustainability goals in this specification. The Contractor shall submit to the CO or designee the following reports.

[[[Note to Spec Writer: Remove (a) if this requirement is accomplished under another PBWS.]]]

- (a) **Waste Reports.** The Contractor shall submit a monthly report on waste handling activities including disposal and recycling. The report shall contain shipping information for hazardous and non-hazardous waste and be submitted by the 15th of each month and upon request by the CO or designee. The report must include the waste type, name and final disposition destination. All Hazardous and Universal Waste shipping documentation shall be maintained for the life of the building. If the Contractor performs non-hazardous solid waste management for the entire building, they shall also report on these solid waste and recycling activities.

- (b) **Environmental Compliance.** The Contractor shall collect and retain requisite data to produce and make mandatory reports required by environmental regulatory agencies including GSA programs, directives and orders, or as necessary to demonstrate ongoing compliance with environmental regulatory operational requirements. These reports include to waste generation, shipment and disposal, hazardous materials storage (Tier II/Emergency Planning and Community Right-to-Know Act reporting), release reporting, fuel tank registration, operator training records, and notices of compliance for reciprocating internal combustion engines.
- (c) **Sustainable Purchasing Practices.** The Contractor shall submit information on sustainable purchasing practices specific to the performance of this Contract. Records showing the monthly cost of sustainable cleaning products and materials purchased must be provided to the United States Department of Agriculture and copies to the CO or designee as required by RCRA. The Contractor shall select from products that are EPA-designated (e.g. Comprehensive Procurement Guidelines [CPG]) and USDA-designated in the Bio Preferred Program refer to the web site in document titled “Web Links” at: [Operations and Maintenance Specification](#), and all other factors (such as price, performance, and availability) being equal, the Contractor shall select the CPG item. For other purchases, unless the Contractor receives an exemption from the CO or designee, the Contractor shall select USDA designated in the Bio Preferred Program, products over products with other sustainable attributes. Guidance for products designated under Federal sustainable product programs – USDA Bio Preferred, EPA CPG, EPA Design for the Environment, and Department of Energy, Energy Star and FEMP - can be found at the website in document titled Web Links” at: [Operations and Maintenance Specification](#). Sustainable products designated under third-party programs include but not limited to Green Seal, Eco Logo, and Environmental Choice. For those categories of products not recognized by one of the aforementioned standard’s, preference shall be given to products meeting the California Code of Regulations maximum allowable Volatile Organic Compounds (VOC) levels for the appropriate cleaning product category (California Air Resource Board/California Code of Regulations (CCR), 17, C.C.R. section 94509 – (Topic cited; Standards for consumer products at the website in “Web Links” at: [Operations and Maintenance Specification](#)).

C.5.6 Energy and Water Efficiency

C.5.6.1 General

The Contractor shall operate equipment and systems per design as efficiently as possible without compromising service to the tenants.

C.5.6.2 Operations

The Contractor shall make full use of available analytic tools (e.g., BAS, AMS, GSALink data, PNNL E4 reports and GSA Rapid Assessment results, as applicable) to diagnose problems and identify operational improvements. When equipment is being replaced, the Contractor, in coordination with the CO or designee, shall pursue the use of energy-efficient replacement parts and equipment items (not limited to Energy Star ® or FEMP-designated Energy Efficient

products, WaterSense, Safer Choice products) that shall meet or exceed the requirements of this statement of work. Any rebates received from a service utility provider or Contractor shall be assigned to the Government.

C.5.6.3 Reporting

On a monthly basis the Contractor shall read and record all available utility and fuel meters (electric, gas, diesel fuel levels, water, cooling tower water make up, irrigation, etc.) and include in the monthly progress report. The Contractor shall use the Energy and Water Efficiency Monthly Report format (see Exhibit 2). The Contractor shall report monthly energy and water usage as compared to the previous year and to explain usage trends. The report shall be submitted to the CO or designee by the 5th business day of the subsequent month.

C.5.7 Advanced Metering Systems

[[[Note to Spec Writer: Remove if there is no advanced metering system or if this subsection is covered under another PBWS]]] [[[Insert buildings with advanced meters]]]

C.5.7.1 General

The purpose of the AMS is to monitor, identify and implement opportunities to reduce energy usage at the building(s) and, in some cases, to verify that the utility companies are billing correctly. In many cases, the AMS shall be connected to the BAS. It shall be the Contractor's responsibility to partner with GSA to utilize fully the AMS to develop and implement strategies that will result in an overall reduction in energy consumption.

C.5.7.2 Operations

The Contractor shall verify daily that each of the advanced meter(s) are functioning properly and are communicating to the regional and Central Office server, as applicable, and are accessible via end-user interface (currently ION Enterprise Energy Management). Where advanced meters are connected through the BAS, the Contractor shall verify daily proper information and data sharing.

C.5.7.3 Maintenance

[[[Note to Spec Writer: Tailor the below language to your individual regional protocols on communication repairs.]]]

The Contractor is responsible for correcting immediately any onsite communication failure to mitigate any loss of data. The Contractor shall create a Work Order in NCMMS to track communication failure resolution. In the event of an onsite communications failure or data loss, the Contractor shall refer to both the manufacturers and GSA's troubleshooting guides. If this does not resolve the issue, and advanced troubleshooting is necessary, the Contractor shall take the next step within 72 hours of occurrence. For advanced troubleshooting, the Contractor shall contact GSA's OFM Energy Division's Advanced Metering Support, guidance can be found at the web site in document titled "Web Links" at: [Operations and Maintenance Specification](#) and inform the COR. The advanced metering support team shall coordinate with GSA IT support or vendors as necessary to assist the Contractor with getting the meter(s) back online. The regional advanced metering lead shall be the Contractor's main point of contact for

advanced metering issues. The Contractor shall add or update Advanced Meter Asset and Location information in NCMMS. The Contractor shall be responsible for the re-commissioning, which includes the calibration of the advanced meters in accordance with the manufacturer's recommended frequency or sooner, if there is evidence that the meters are not reading correctly. If advanced meters cannot be calibrated by design, the Contractor shall notify the COR when the meter is not performing as designed. Meter recommissioning documentation shall be submitted as a Work Order via the NCMMS. Where weather sensing equipment is installed as part of the AMS, the Contractor shall ensure proper daily communication.

C.5.7.4 Reporting

[[[Note to Spec Writer: Tailor the below language to your individual regional protocols.]]]

Contractor will be responsible for comparing monthly consumption collected by the AMS to the actual utility bill consumption as a part of its ongoing monitoring efforts. Variances of more than 10% shall be reported to the GSA Energy Division, the COR and the Regional Advanced Metering Lead who will assist with resolving the discrepancy. As a part of the re-commissioning of meters previously offline, the Contractor shall confirm that all changes have been documented and update on network diagrams, including any changes in Internet Protocol (IP) addresses. The Contractor shall be responsible for recording recalibration of advanced metering equipment in the Monthly Report and recorded in the NCMMS.

C.5.8 Building Automation Systems and IT Controls

C.5.8.1 General

The automatic centralized control of a building's HVAC, lighting and other systems are managed through a BAS and may also be referenced as Building Monitoring and Control Systems. The objectives of building automation are improved occupant comfort, efficient operation of building systems, reduction in energy consumption and operating costs, and improved life-cycle of equipment. BAS core functionality keeps building climate within a specified range, provides light to rooms based on an occupancy schedule (in the absence of overt switches to the contrary), monitors performance and device failures in all systems, and provides malfunction alarms to building maintenance staff. The intent of a BAS is to reduce building energy and maintenance costs. The Contractor must retain levels of expertise necessary to manage the control systems in a manner that meets the objectives of this Contract either by retaining on staff a factory trained and certified technician or subcontracting with the BAS vendor for services. The Contractor must establish disaster recovery plans for loss of connectivity to the BAS and procedures to operate the building systems manually.

C.5.8.2 Operations

Equipment shall be operated according to the established sequence of operation for the BAS. The Contractor is responsible for notifying the CO or designee if a sequence of operations, equipment or schedule is not operating as designed or at the highest efficiency and resulting in unnecessary energy use. The Contractor is responsible for retaining an adequate level of expertise to manage the control systems. If the Contractor does not have a manufacturer trained or equivalent BAS operator onsite, the Contractor shall enter into a subcontract,

including regular scheduled support (not merely support on a contingency basis), or remote access (where available and subject to GSA IT governance security clearances and training), with a firm that has these skills. This subcontract shall include regularly scheduled maintenance, including sequence of operation tuning, calibration; BAS log review, and other BAS system maintenance. The Contractor shall monitor the BAS for alarms at all times. A BAS alarm after Normal Working Hours that impacts the building operations must be corrected under emergency call back Work Order service and recorded in the NCMMS. GSA-IT shall be entering asset information for IP-enabled BAS controllers that are connected to the GSA network.

All computers networked with building monitoring and control systems located inside GSA facilities, or that provide storage of and access to GSA data, including data related to energy usage, industrial systems controls, physical access controls, and lighting controls, are required to be hosted exclusively on GSA's physical network and system infrastructure, unless otherwise accepted by CO or designee.

The Contractor shall maintain the following minimum standards described below.

C.5.8.2.1 GSA-hosted Systems Requirements

The Contractor shall:

- a. Ensure a building monitoring and control systems, applications and devices are implemented as designated in the PBS P-100 Design Standard (current version) and the PBS Building Technical Reference Guide, including OFM BAS standards and specifications. Additionally, all Government IT systems are required to meet FISMA standards for IT security.
- b. Ensure that all IP addressable devices, appliances or software that shall communicate over the GSA network are assessed and have all identified vulnerabilities remediated in order to be approved by GSA-IT Security for use on the GSA network. For more details, please refer to the Building Technologies Technical Reference Guide.
- c. Ensure that all device or groups of devices that communicate with GSA system data and use wireless or radio frequency (RF) based communications are subject to all GSA IT Security policies related to the use of wireless technology. This policy establishes the requirement that these devices be submitted for IT security testing and remediation in order to receive approval for use at GSA.
- d. Ensure that all building systems software (server and client) are hosted on Government furnished equipment (GFE), including GSA virtual server or GSA provided desktop/laptop workstations.
- e. Ensure that all IP traffic is managed by GSA, and IP addresses, as well as all routing and switching equipment, shall be furnished exclusively by GSA.
- f. Be responsible for supporting all cabled pathways connected to GSA's network including copper and fiber cabling, necessary to enable IP network communication among system devices and network components, and all break/fix requirements. All new cabling, including break/fix, shall be installed in accordance with the PBS Telecommunications Distribution and Design Guide.

The Contractor is not responsible for interconnecting cabling of the GSA onsite network components.

- g. Ensure that the Contractor staff receives preliminary favorable and ultimately completely favorable adjudication of their Tier 1 clearance in accordance with the HSPD-12 directive to obtain a GSA ENT user credential, which is required for all system access. All elevated access, requires Tier II clearance.
- h. Ensure that at no time a GSA hosted building monitoring and control system made accessible to the public internet or via any third party network connection.
- i. Be aware of building systems running on GSA IP Enterprise Network and be capable of initiating troubleshooting, if network communications is suspect. This means being familiar with the procedure for logging GSA IT Help Desk ticket and following up to ensure ticket is being worked by assigned party.

C.5.8.2.2 Excepted Systems Requirements (not hosted on GSA's system infrastructure)

The Contractor shall:

- a. Ensure the CO or designee approved antivirus software subscription is kept in effect and the software used is current at all times.
- b. Ensure all Contractors provided software that has an End User License Agreement is presented to and approved by the CO or designee before that software is purchased.
- c. Ensure Contractor a personnel does not use the BAS system to connect to websites.
- d. Ensure antivirus and spyware scans are conducted monthly.
- e. Be responsible for keeping all workstation and server operating systems updated, including Windows (or other operating system), Java, Adobe, and all other standard software. Critical updates shall be downloaded and installed monthly.
- f. Ensure complete data backup to a CD, DVD or flash drive, including trend logs and control software, is conducted whenever a software or programming change is made but no less frequently than monthly.
- g. Ensure disk drive maintenance, including defragmentation, is performed quarterly.
- h. Be responsible for software, licenses and security updates to all Contractor provided systems devices.
- i. Ensure proper Configuration Management Plan is in place for the BAS devices and applications so the system can be supported.
- j. Ensure there is strong encryption on devices and applications for safeguarding sensitive data and login credentials.
- k. Ensure unnecessary services are disabled (e.g., FTP and Telnet) to protect the system from unnecessary access and a potential exposure point by a malicious attacker.
- l. Ensure unnecessary open ports are closed or blocked to secure against unprivileged access.
- m. Protect against Cross-Site Scripting, which is a common vulnerability in web applications where an attacker can compromise or take control of a site.
- n. Enforce Least Privilege, where proper permissions are enforced on a device or application so that a malicious attacker cannot gain access to all data. Enforcing Least Privilege shall only allow users to access data they are allowed to see.

- o. Protect against Insufficient User Access Auditing, where device or application does not have a mechanism to log/track activity by user.
- p. Not use the use of end-of-life systems and application/system software that is no longer supported by the manufacturer.
- q. Use the latest, supported and approved operating systems.
- r. Ensure that all proposed standard installation, operation, maintenance, updates, and patching of software do not alter the configuration settings from the approved United States Government Configuration Baseline.
- s. Ensure that the use of commercially-provisioned circuits to manage building systems is strictly prohibited. All circuits shall be provisioned through GSA IT.
- t. Ensure workstation or server running building monitor and control system is not connected to the public internet (Trusted Internet requirement of the 2100.1 order). The system shall not be accessible from remotely.
- u. Adhere to GSA-IT Security Procedural Guide, CIO-IT Security-16-76, Building Technologies Technical Reference Guide, NIST IT Security Special Publications.
- v. Ensure all IP-enabled devices and applications are approved by GSA-IT Security before they are installed or connected on the GSA network.
- w. Provide a network diagram of all IP-addressable devices that terminate on the GSA network to the GSA IT program managers. GSA IT shall be included in the design phase of the network infrastructure. Vendor-provided diagrams must be submitted in digital display and in an editable format, such as Microsoft Visio.
- x. Provide documentation and assist GSA-IT and PBS with performing disaster recovery so that systems can function on the local area network (LAN) in an event of an outage.

C.5.8.3 Maintenance

C.5.8.3.1 BAS Control Systems and upgrades

BAS Control Systems shall be maintained as designed and updated when required, including data point and graphics, as applicable. The Contractor shall perform maintenance required to ensure that all BAS devices function properly and repair or replace components that fail. The Contractor shall procure for BAS software and firmware updates and security patches sufficient to keep the system up-to-date with current versions of that application and field device controllers to address any known security vulnerabilities with that application software or device firmware. The Contractor shall procure software maintenance on an annual basis or leverage longer term contracts with one-year option periods. GSA reserves the right to remove this scope from the Contract at any time and furnish its own software maintenance contract with the application manufacturer or its authorized partners. Regardless of which party procures the required software maintenance, the Contractor is responsible for supporting the testing of all application, firmware, operating system, and database software patches.

The Contractor shall not upgrade or patch any BAS device independent of a qualified support from the manufacturer or its representative and then and only after consultation with GSA. The Contractor shall cooperate with GSA and the BAS contractor to facilitate any upgrades GSA deems necessary for the functionality or security of the BAS. The Government shall upgrade or change control system software or reprogram control systems during the performance period of

the Contract. The Contractor shall not modify sequences of operation or control programs or run systems manually without prior approval of the CO or designee in consultation with regional subject matter expert (SME). Where sequence of operation changes are approved, the Contractor shall provide accurate edits to the sequence of operation to document the changes made.

C.5.8.3.2 BAS Alarms

[[[Note to Spec Writer: Specify frequencies to testing BAS at a minimum once a year.]]]

BAS alarms shall be treated as Work Orders and responded to accordingly. Any adjustments to set points to accommodate tenant comfort shall be approved in advance by the CO or designee. Repetitive or associated alarms shall be treated in the aggregate and tracked under the Work Order system established in the NCMMS. Communications for alarms set up for remote notification shall be tested on a recurring basis.

C.5.8.4 Testing/Inspecting

[[[Note to Spec Writer: This can be removed if the Region has other methods to do monitoring and correcting excessive energy use buildings.]]]

The Contractor shall conduct the six-step re-tuning procedure described in the Pacific Northwest National Laboratory (<http://retuningtraining.labworks.org/training/lms/>). If Contractor does not have adequate level of expertise to complete Re-tuning, all requirements shall be included in BAS maintenance sub-contract. The initial frequency of the re-tuning is semi-annually to coincide with the heating and cooling seasons. After completing two re-tuning cycles the CO or designee in consultation with the Contractor shall determine the appropriate frequency of the re-tuning effort based on the size and complexity of the facility. Re-tuning shall be reported to the CO or designee and regional SME and documented in the monthly report. The re-tuning report shall include any Contractor suggestions and corrective actions.

C.5.8.5 Reporting

[[[Note to Spec Writer: Delete GSALink requirement, if not applicable.]]]

Deficiencies in the BAS system operations shall be identified by BAS trending, GSALink or Contractor's tours. All deficiencies shall be reported to the CO or designee immediately and documented and included in the monthly report. BAS alarms logs shall be included in the monthly report to show that they are being addressed. These logs shall include unique usernames for the operator addressing the alarm.

C.5.8.6 Smart Building Technology

[[[Note to Spec Writer: Remove if building does not have this technology.]]]

GSA PBS has several programs in development and at various stages of implementation. One of these programs includes Smart Building technologies. A key objective of implementing Smart Technologies in GSA buildings is to capture and make available more real-time performance data about the individual building systems (e.g., HVAC/BAS, lighting, and Advanced Meters). This data shall be made available to the Contractor and as GSA analyzes this new trend of

monitoring building performance at a detailed level, building support personnel engagement shall increase in significance over time. The Contractor is advised that tools, processes, data, and some procedures shall be modified to meet GSA requirements for long-term improved operational efficiencies. The Contractor shall continue to monitor developments in this area as more buildings in the GSA portfolio deploy Smart Technologies.

New building technologies, and their convergence with traditional information technology, have altered the way in which facilities can be monitored, maintained, and operated. Trends in building systems technology have provided opportunities in the market place to alter the way facilities managers use real-time data to operate their facilities more efficiently. Building systems are getting increasingly more dependent on software, IT networks (physical and wireless), servers, internet access, and cloud-based/hosted solutions. This shift in domain expertise has outpaced traditional design and construction practices. As a result, building operations and maintenance staff need to adapt, be more proactive, and leverage the availability of real-time data to help them perform building systems support more effectively. This shall involve more thorough planning and redefining some processes, procedures, and job roles to better operate the facilities that have newer technology-based systems.

GSA is fielding diagnostic and optimization software to detect problems and inefficiencies in equipment operation. The Contractor shall act on the recommendations of such diagnostic and optimization software reporting. This shall include using the results of the diagnostic and optimization software to generate a Work Order, or to respond to a Work Order automatically generated by the diagnostic program application. The Contractor involved in diagnostic software programs shall provide status updates of diagnostic results and attend monthly meetings to report and troubleshoot diagnostic test results.

C.5.9 Fire Protection and Life Safety Equipment and Systems

C.5.9.1 General

The Contractor shall use the current NFPA codes and standards as stated in this subsection to perform inspections, testing, and preventive maintenance of fire protection and life safety systems and equipment and all test results and certifications shall be recorded. The Contractor shall not make any software upgrades or corrections to the Fire Protection Systems without prior approval and coordination of the GSA Regional Fire Protection Engineer. The Contractor shall:

- a. Utilize the latest edition of the applicable NFPA code or standard.
- b. Ensure all fire protection and life safety systems, equipment, and markings are kept operational at all times, except while being tested or repaired.
- c. In the event fire protection and life safety equipment is not returned to operational condition, notify the CO or designee and provide a fire watch.
- d. Ensure all maintenance and pre-planned impairments of the fire protection and life safety systems and equipment have been authorized and approved by the CO or designee prior to the Contractor performing any work.
- e. Comply with all appropriate safety code requirements. If the Contractor encounters equipment that is in a condition that shall endanger life or property, the Contractor shall

immediately notify the CO or designee of the condition requiring immediate action. Within 24 hours following the notification of the CO, the Contractor shall provide to the CO or designee a written report of the hazardous condition and recommended corrective action.

- f. Enter into NCMMS as a Work Order any deficiency identified by the Contractor during a required inspection; evidence of correcting such deficiency, unless funding is not available, shall be provided with the subsequent Contractor's Monthly Progress Report after correction action is completed.
- g. Provide all tools, supplies and equipment necessary to inspect test, and maintain the fire protection and life safety equipment and systems in accordance with applicable NFPA codes or standards.

C.5.9.2 Fire Alarm System Services and Emergency Communication Systems

[[[Note to Spec Writer: Remove if there is no fire alarm system or emergency communication systems. If this subsection is covered under another PBWS, identify ownership and responsibility of system.]]]

The Contractor shall ensure compliance with NFPA 72, National Fire Alarm and Signaling Code, in the performance, inspection, testing, acceptance, and preventive maintenance or repair of fire alarm and notification systems, equipment and components of said systems and all other ancillary devices that operate related equipment. The Contractor shall maintain Remote Supervising Station monitoring service equipment, all fire alarm transmitters and related equipment.

[[[Note to Spec Writer. Were FPS or a third-party contractor is not monitoring the fire alarm system, please insert this language: The Contractor shall provide and maintain Remote Supervising Station equipment and monitoring services evaluated by Underwriters Laboratories (UL) to UL Standard 827, Central Station Alarm Services (UUFY Category Code) to monitor all fire alarm transmitters and related equipment.]]]

Fire alarm system or emergency communications system inspection, testing, maintenance, and repair shall be performed during normal working hours when it does not interfere with building or tenant operations. Testing that activates notification devices, initiates elevator recall or activates HVAC shutdown shall always be tested after hours. When such inspection, testing, maintenance, or repair is expected to interfere with building or tenant operations, it shall be performed after normal working hours without additional costs to the Government. The Contractor shall schedule with the GSA Facility Manager and the CO or designee all testing and non-emergency shutdowns of such systems and assure that back-up protection is provided by the Contractor (i.e., arrangement of additional personnel stationed in the areas affected and at the fire alarm system control unit or emergency communications control unit) any time such system is temporarily out of service.

When impairments to the systems occur or when impairments are identified during inspection, testing or maintenance activities, the Contractor shall inform the GSA Facility Manager and the CO or designee immediately. The Contractor shall follow the impairment procedures outlined in

NFPA 72 and provide a fire watch in areas left unprotected. The fire watch shall remain in place until the systems are completely restored during the performance of routine service and testing procedures. If fire watches are required, the labor costs of fire watches as part of the repair costs are reimbursable less the reimbursable repair threshold.

When unwanted fire alarm system activations occur, without additional expense to the Government, the Contractor shall be liable for all local fees associated with unwanted fire alarm system activations that are caused by the Contractor and require local jurisdiction fire department response to the building.

The Contractor will report unwanted fire alarms to the CO or designee at the close of each business day and provide the follow information: the approximate time, date and location of the system activation, a brief description of the fire alarm system activation, including initial device activation, location of initial device, a brief reason for why the fire alarm system activated (if known), how the fire department was notified and what time they arrived on scene, an approximate count of how many building occupants evacuated the building and for how long in minutes.

C.5.9.3 Water-Based Fire Protection Systems

[[[Note to Spec Writer: Remove if there is no water-based fire suppression system or if this subsection is covered under another PBWS.]]]

The Contractor shall ensure compliance with NFPA 25 in the inspection, testing and maintenance and repair of water-based fire protection systems, and in the performance; inspection, testing, preventive maintenance and repair of all devices that are components of water-based fire suppression systems.

Water-based fire protection system inspection, testing, preventive maintenance, and repair shall be performed during Normal Working Hours when it does not interfere with building operations. When such inspection, testing, preventive maintenance, or repair is expected to interfere with building operations; it shall be performed after normal working hours without additional costs to the Government. The Contractor shall schedule with the Facility Manager and the CO or designee all non-emergency shutdowns of the water-based fire protection system and back-up protection shall be provided by the Contractor any time the water-based fire protection system is expected to be out of service for more than 10 hours. When a water-based fire protection system is returned to service, it shall be verified that the system is working properly in accordance with the component action requirements in NFPA 25.

When impairments to the system occur or when impairments are identified during inspection, testing, or preventive maintenance activities, the Contractor shall inform the GSA Facility Manager and the CO or designee immediately. The Contractor shall follow the impairment procedures outlined in NFPA 25 and provide a fire watch in areas left unprotected or if the system is out of service for more than 10 hours in a 24-hour period. The fire watch shall remain in place until the water-based fire protection system is completely restored to service. Note: Temporarily shutting down a system as part of performing the routine inspection, testing,

preventive maintenance or repair on that system while under constant attendance by qualified personnel and where the system can be restored to service shall not be considered impairment.

C.5.9.4 Fire-rated Door Assemblies

[[[Note to Spec Writer: Remove if there are no fire-rated door assemblies or if this subsection is covered under another PBWS.]]]

The Contractor shall ensure compliance with NFPA 80, Standard for Fire Doors and Other Opening Protectives, in the inspection, testing, preventive maintenance and repairs of all fire-rated door assemblies. Please note that the inspection of fire-rated door assemblies shall also meet the requirements in NFPA 101, Life Safety Code.

C.5.9.5 Fire Damper and Combination Fire/Smoke Dampers

[[[Note to Spec Writer: Remove if there are no fire damper and combination fire/smoke dampers or if this subsection is covered under another PBWS.]]]

The Contractor shall ensure compliance with the NFPA 80, Standard for Fire Doors and Other Opening Protectives, in the inspection, testing, maintenance and repair of all fire dampers, radiation dampers, and combination fire/smoke dampers. Please note that maintenance of combination fire/smoke dampers shall also meet the requirements contained in NFPA 105, Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives.

C.5.9.6 Smoke Doors Assemblies

[[[Note to Spec Writer: Remove if there are no smoke door assemblies or if this subsection is covered under another PBWS.]]]

The Contractor shall ensure compliance with the NFPA 105, Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives, in the inspection, testing, preventive maintenance and repair of all smoke door assemblies.

C.5.9.7 Smoke Dampers

[[[Note to Spec Writer: Remove if there are no smoke dampers or if this section is covered under another PBWS.]]]

The Contractor shall ensure compliance with NFPA 105, Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives, in the inspection, testing, preventive maintenance and repairs of all smoke dampers.

C.5.9.8 Portable Fire Extinguishers

[[[Note to Spec Writer: Remove if there are no portable fire extinguishers or if this subsection is covered under another PBWS.]]]

The Contractor shall ensure compliance with NFPA 10, Standard for Portable Fire Extinguishers; in the inspection, testing, preventive maintenance and repairs of all portable fire extinguishers.

C.5.9.9 Non-Water-Based Fire Extinguishing Systems

[[[Note to Spec Writer: Remove if there are no non-water-based fire extinguisher systems or if this subsection is covered under another PBWS.]]]

The Contractor shall ensure compliance with the following specified codes in the inspection, testing, preventive maintenance and repairs of the following types of non-water-based fire extinguishing systems:

- a. Carbon dioxide extinguishing systems, NFPA 12, Standard on Carbon Dioxide Extinguishing Systems.
- b. Halogenated extinguishing systems, NFPA 12A, Standard on Halon 1301 Fire Extinguishing Systems.
- c. Dry chemical extinguishing systems, NFPA 17, Standard for Dry Chemical Extinguishing Systems.
- d. Wet chemical extinguishing systems, NFPA 17A, Standard for Wet Chemical Extinguishing Systems.
- e. Fire extinguishing systems, NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations.
- f. Clean agent fire extinguishing systems, NFPA 2001, Standard for Clean Agent Fire Extinguishing Systems.

C.5.9.10 Smoke Control Systems

[[[Note to Spec Writer: Remove if there are no smoke control systems or if this subsection is covered under another PBWS.]]]

The Contractor shall ensure compliance with NFPA 92, Standard for Smoke Control Systems, in the inspection, testing, preventive maintenance and repairs of smoke control systems.

C.5.9.11 Emergency and Standby Power Systems

[[[Note to Spec Writer: Remove if there are no emergency and standby power systems or if this subsection is covered under another PBWS. Identify if outside load bank is required to perform testing.]]]

The Contractor shall ensure compliance with the following specified codes in the inspection, testing, preventive maintenance, repairs and exercising of equipment per the manufacturer's recommendations for the following types of emergency and standby power systems:

- a. Emergency power supply systems, NFPA 110, Standard for Emergency and Standby Power Systems.
- b. Stored electrical energy emergency and standby power systems, NFPA 111, Standard on Stored Electrical Energy Emergency and Standby Power Systems.

C.5.9.12 Emergency Lighting Systems and Exit Signage

[[[Note to Spec Writer: Remove if there is no emergency lighting and exit signage or if this subsection is covered under another PBWS.]]]

The Contractor shall ensure compliance with NFPA 101, Life Safety Code, in the inspection, testing, preventive maintenance and repair for purchasing systems and signage to bring the building up to code of emergency lighting systems, emergency lighting equipment, and exit egress marking systems.

C.5.9.13 Fire Resistance Rated Construction

The Contractor shall ensure compliance with the International Fire Code and NFPA 221 in the inspection, preventive maintenance, repair or installation of new systems and assemblies used for structural fire resistance, fire resistance rated-construction separation of adjacent spaces and construction installed to resist the passage of smoke to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings. All materials and fire-stop systems provided or maintained under this Contract shall comply with these codes.

Materials and fire-stop systems used to protect membrane and through penetrations along with joints and voids in fire resistance-rated construction and construction installed to resist the passage of smoke shall be maintained. The materials and fire-stop systems shall be securely attached to or bonded to the construction being penetrated with no openings visible through or into the cavity of the construction. Where the system design number is known, the system shall be inspected to the listing criteria and manufacturer's installation instructions.

The Contractor shall notify the Facility Manager and the CO or designee of areas in the building that firestop systems are lacking or compromised.

C.5.9.14 Lightning Protection Systems

[[[Note to Spec Writer: Remove if there are lightning protection systems or if this subsection is covered under another PBWS.]]]

The Contractor shall ensure compliance with the inspection, testing, maintenance and repair of lightning protection systems in accordance with NFPA 780 - Standard for the Installation of Lightning Protection Systems.

C.5.9.15 Chemical Sensors

[[[Note to Spec Writer: Remove if there is no chemical sensor equipment or if this subsection is covered under another PBWS.]]]

The Contractor shall be responsible for the testing, maintenance and repair of chemical sensor equipment as required by the manufacturer's recommendations. Those tests shall be conducted by a certified manufacturer's representative. HVAC unit shutdowns and damper shutdowns required as a result of a trip of the chemical sensor system shall be inspected and documented. All documentation of the testing including the chemical sensor, HVAC shutdown, and proper damper operation shall be documented in NCMMS within 48 hours of test conclusion.

C.5.10 TOURS

C.5.10.1 General

The Contractor shall tour major building systems, equipment, tanks and anything requiring tours mandated by any acts, codes or regulations as contained in this PBWS or any state or local requirements. To accomplish this objective the Contractor shall develop a Tour Plan and submit it to the CO or designee for approval, no later than end of Startup or transition phase. With the advent of technology and innovation a “tour” is no longer exclusive to the physical walks. A tour shall be a part, or a combination of physical visits and automated systems. Tours are an opportunity to view equipment in different phases of operation, make adjustments, validate controls, verify set points, check efficiency, physical condition of mechanical space, and overall safety. It is not the intention of the Government to overly prescribe tour frequencies or methodologies; instead, the Contractor is expected to develop tours at frequencies and using methodologies that are of value to operations, inclusive of analytical decision making intended to optimize operations based on real time performance data.

C.5.10.2 Proactive Facility Tours

The Contractor shall conduct periodic tours of the building to identify proactively and remedy any issues pertaining to lighting, bathroom fixtures, and other tenant environmental comfort concerns. The tours shall seek to work in conjunction with the Contractor's energy conservation efforts, proactive Work Orders, and equipment condition assessments. All findings noted during the tour shall be tracked and a Work Order shall be initiated for corrective action by the Contractor.

C.5.10.3 Minimum Tour Frequencies

- a) Daily: Major HVAC equipment (when in operation), including boilers, chillers, cooling towers, pneumatic control air compressors, air handler rooms, main switchgear and primary electrical equipment rooms, fire alarm system and control panels (fire alarm system control panels shall not have any unwanted trouble conditions), steam system and reducing and regulating stations, and special HVAC and uninterruptible power systems for critical functions.
- b) Weekly: Distributed HVAC equipment including package units and external condensers, pumps, motors, sewage ejectors, fire pumps, condensate drip pans and generators. Incorporate moisture control tours to prevent building damage, minimize mold contamination, illuminate leaks, and reduce health risks related to moisture.
- c) Twice per Month: Battery systems.
- d) Monthly: Transformers, secondary electrical rooms, switchgear, and primary electrical equipment rooms.

C.5.10.4 Monitoring of Central Plant Equipment

[[[Note to Spec Writer: Modify this to reflect conditions or concerns at the building – such as condition of plant equipment, history of stability, instability.]]]

Where central plant equipment (chillers over _____ tons **[[[Insert tonnage]]]** capacity, boilers over _____pounds per square inch (psi) **[[[Insert psi rating]]]** is not (1) controlled by a

programmed Sequence of Operations in a BAS, (2) or capable of daily tracking and trending of the operations in the plant or (3) centrally alarmed with alarm paging and operational watch procedures, in addition to tour requirements specified elsewhere in this PBWS, the Contractor shall ensure the following is performed:

- a. Monitor the starting, stopping and loading of equipment.
- b. Check all operating equipment in the watch area every two hours.
- c. Record operating data in appropriate logs or records every two hours.
- d. Make adjustments at the central control panel in response to changing operating conditions.

C.5.10.5 Operating Logs and Tour Check Sheets

Contractor shall maintain Operating Logs and Tour Sheets as part of the data for major equipment. Documentation shall be completed at the time of tours. Information recorded in the logs shall be sufficient to track the operating hours and performance history of the equipment. Records shall be kept of tours and action items needed based upon tour discovery. As such, Operating Logs and Tour Sheets shall be a part of the Tour Plan and a Tour Sheet shall be established for any space identified as requiring a tour. The Contractor shall upon request make the operating logs and tour sheets available for inspection by the CO or designee.

A Tour Sheet shall contain at a minimum:

- a. General space condition and annotate any discrepancies.
- b. Identify broken/inoperable equipment and capture Work Order status.
- c. Accurately reflect equipment inspected during tour.
- d. Capture operating data of identified equipment.
- e. Status in regards to operational parameters.

Contractor shall evaluate discrepancies in Operating Logs and Tour Sheets and the operational performance shall be investigated and repaired when necessary. All work performed on equipment as a result of a tour inspection shall have a Work Order generated in the NCMMS.

The O&M Contractor shall submit to the CO, or designee, a proposed Operating Logs and Tour Sheets for approval prior to implementing the Tour Plan.

C.5.10.6 Reporting

Problems or conditions that shall potentially affect the efficient operation of the building or create a negative impact on the tenant shall be immediately reported to the CO or designee.

C.5.11 Repairs

C.5.11.1 General

A “repair” is an act of restoring inoperable, dysfunctional or deteriorated equipment, systems, or material to a fully functional, non-deteriorated state. Repairs involve some combination of labor and repair or replacement of the equipment, parts, components or materials.

[[[Note to Spec Writer: Insert Shared Liability dollar amounts.]]]

The Contractor shall perform reimbursable and non-reimbursable repairs as defined in subsection 5.11 of the PBWS. Repairs are handled on a shared liability basis. This contract has a shared liability amount threshold which means the Contractor is responsible for the first (\$_____) of the repair costs. The intent of this Contract is to ensure that most repairs are accomplished by Contractor personnel. However, the Government recognizes that occasionally there are certain specialized repairs that require specialized skills outside the skill sets of the Contractor personnel. If the Contractor identifies a repair that it believes is of such a specialized nature that a specialized subcontractor is required to complete the repair properly, the Contractor shall provide written justification in advance, to the CO or designee, for approval of the need to use a subcontractor. If approved, the cost of the subcontractor's labor and material shall be treated as a repair part for the purposes of calculating the repair cost. Shared liability shall not apply when repairs are required as a result of Contractor (or subcontractor) negligence. In such instances, the Contractor shall be responsible for all costs associated with the repair.

Any replacement parts used during the course of this Contract shall be of comparable or higher quality and efficiency. The CO or designee shall require replacement of components with components from the same manufacturer to maintain consistency throughout the building. Materials and parts that are visible to building occupants shall be to building standard and maintain the same appearance as similar materials and parts in the occupied space. Components of control systems shall be replaced so as to maintain the tie-in to the control system with no degradation of data throughput, memory, point capacity, data acquisition, or programmability. Motors shall be replaced with premium efficiency motors as defined by the NEMA MG-1 standard or in compliance with Local utility guide demand-side management rebate guidelines. Old transformers shall be replaced with NEMA-rated class one efficiency transformers in accordance with the NEMA TP-1 standard. Replacement of variable frequency drives shall be done in accordance with recommendations found in NEMA, Application Guide for AC Adjustable Speed Drive Systems. Energy Star-rated equipment shall be installed where available and when there is no engineering or operational reason not to select an Energy Star product. Energy-consuming items shall be the most efficient in their class. GSA Proving Ground identified technologies with deployment potential for GSA shall be used when applicable.

The Contractor shall stock commonly used items and stay in good standing with a network of suppliers that shall deliver ordered items without any delay. Repairs delayed due to supply houses refusing to do business with the Contractor for any reason, is not an excuse to delay the repair. Any equipment components/systems that can no longer be repaired shall be replaced. These replacements shall be considered a repair and the shared liability amount threshold shall apply.

C.5.11.2 Operations

C.5.11.2.1 Non Reimbursable Repair

[[[Note to Spec Writer: Insert Dollar amounts and time frame.]]]

A non-reimbursable repair is a repair or replacement requiring no more than (\$_____) in cost for repair parts and materials only (including any approved subcontracting costs). The cost of

consumable parts and materials shall not be calculated as part of the Contractor's repair parts and material costs. Non-reimbursable repairs are entirely the Contractor's responsibility with no reimbursement from the Government.

Non-reimbursable repairs shall be completed within () hours (continuous time, includes after hours and weekends) from identification of the problem unless an extension is approved by the CO or designee. The Work Order shall be put into a status field in NCMMS to indicate the nature of any delay, with appropriate remarks.

C.5.11.2.2 Partially Reimbursable Repairs

Partially Reimbursable Repairs shall be identified as single incident, not an accumulation of various repairs (bundling). If a repair exceeds the threshold and has been approved and verified by the CO or designee, it becomes a reimbursable repair. A partially reimbursable repair is reimbursable to the Contractor for the portion (shared liability) of the cost exceeding the repair threshold. The completion date of reimbursable repairs shall be mutually agreed upon by the CO or designee and the Contractor. The CO or designee shall determine if the repair can be made during Normal Working Hours. If the Contractor uses in-house labor resources during Contractor employees' Normal Work Hours, to perform the repair, no labor shall be charged. If the work is being performed outside these hours the labor rate shall be the overtime rate established in the Contract. Use of in-house Contractor employees for overtime work shall be approved in advance, by the CO with proper authority. If the work is subcontracted, due to the need of a specialty skill, the cost proposal shall include subcontractor's labor hours, hourly rate, and parts and materials listing with associated costs, and overhead and profit costs. The Contractor shall only apply overhead and profit after the Contractor's shared liability has been subtracted.

[[[Note to Spec Writer: The region may consider a lower threshold limit as a best practice to negotiate a lower Contract cost. In this example, assume the non-reimbursable repair threshold is \$500.00.]]]

Example:

A repair is identified and estimated by the Contractor to cost \$1,200.00 for repair parts and materials only. The CO or designee shall verify and approve both the need for the repair and the \$1,200.00 estimated cost of repair parts and materials. In this example, the Contractor shall pay the first \$500.00 of the repair and GSA shall pay the remaining \$700.00.

- a. Total estimated approved cost for repair parts and materials to complete repair
\$1,200.00
- b. Contractor's shared liability amount to be subtracted (same amount as the non-reimbursable threshold)
-\$ 500.00
- c. Total to be paid by GSA to the Contractor for the repair
\$700.00

The required completion date for reimbursable repairs shall be established when the CO or designee approves the work in writing, as mutually agreed upon by the CO or designee and the

Contractor. The Contractor shall attempt to complete work as promptly as feasible. Immediately upon identification of a reimbursable repair, the Contractor shall create a Work Order in the NCMMS and defer it by putting it in a “hold” status until required approval is obtained from the appropriate CO or designee.

C.5.11.2.3 Fully Reimbursable Repairs

Repairs that are caused by third party vandalism, misuse/abuse by third parties, or acts of God (e.g., hurricanes, tornadoes, earthquakes, hail, or floods), including natural disasters where the Contractor took all reasonable precautions and exercised due diligence, are fully reimbursable. The Contractor shall be reimbursed under the Additional Services provisions described in this PBWS or at the Government's sole discretion; the Government shall have the work performed by other means. When new equipment/systems are installed, the Contractor shall be responsible for entering and maintaining warranty information/data/records.

C.5.11.3 Warranties

The Contractor shall contact installers or manufacturers, as appropriate, for work that is covered under a warranty and maintain records of warranty service. The Contractor shall avoid actions that would invalidate a warranty, unless authorized by the CO or designee. If an installer or manufacturer fails to comply with the terms of a warranty, the Contractor shall immediately notify the CO or designee.

C.5.11.4 Third-Party Contractors

The Government reserves the right to order repairs from a third party contractor. If the repair is a reimbursable repair, the Government shall inform the Contractor of the outside source's price, and deduct \$_____ **[[[Insert threshold. Note: This shall be the same figure used to define the threshold for non-reimbursable repairs in subsection 5.11.2.1]]]**, or the third party contractor's price, whichever is less, from the Contractor's payments. Contractor shall ensure current-in-force warranty information is maintained in NCMMS and checked prior to maintenance on affected equipment.

C.5.12 Work Orders

C.5.12.1 General

The Contractor shall manage all Work Orders for each building and serve as the responsible main point of contact for all work **[[[Note to Spec Writer. If the POC is different, change.]]]** The intent of the management of Work Orders is to maintain a safe, healthy and functioning environment for all occupants and to preserve the asset value of the building(s) in the scope of the Contract. The Contractor's performance in management of the work scope shall be assessed by tracking the completion record, requirements performance, tenant satisfaction, and the overall accountability and organization of the work. Nationally, the Government shall use the data collected by the Contractor to characterize and develop reports using building asset data and to study trends pertaining to O&M activities. Utilization of NCMMS including Work Order volume, completeness, timely entry, and timely closure as recorded in NCMMS is part of GSA's national performance measures, and part of quality assurance plans. The Contractor

shall update Work Order data within one business day or less of work order receipt, acceptance, start of work, and work completion.

C.5.12.2 Operations

GSA uses a NCMMS to manage the work of the Contractor. It is used to manage all work, scheduled and unscheduled maintenance and repairs, any building environment-related tenant complaints, associated documentation and any miscellaneous work required for all buildings. The Contractor shall operate a Work Request/Work Order management system and administrative support functions during Normal Working Hours and act as a central point of contact for the Government and building occupants. The administrative support can be off site. Management activities include accepting Work Orders from a Service Call Center **[[[delete if not applicable]]]**, generating Work Orders and as the need arises and, tracking and maintaining Work Order data records. This includes Work Orders for work not under the scope of this Contract (*i.e.*, performing a central Work Order desk function for the facility, regardless of who is responsible for responding to the Work Order) and janitorial, pest control, elevator and landscaping service calls, when requested.

The Contractor shall enter all minimally required data into the NCMMS, including all Work Orders and resultant Work Orders, Work Order description, problem cause, and remedy, timestamps, work start, and completion, as well as time to complete any necessary action and log entries. The Contractor shall update Work Orders in NCMMS timely, preferably within one hour of change in status, and in all cases in same day as the work status changed (*e.g.*, reported, assigned, started, or completed).

Primary duties of the Contractor to manage the majority of the work are:

- a) Attend required training on the use and maintenance of the Work Order management tools provided by the Government and to increase proficiency in the tools.
- b) Operate as a central point of contact for the Government and building occupants to take all Work Orders, and track and maintain Work Order records in the NCMMS. Including communicating any work requests not under the scope of this Contract that are received through regular channels. Work not under this scope shall be entered and tracked in the NCMMS for proper disposition as directed by GSA.
- c) For tenant Work Requests, Contractor shall also record tenant contact information, tenant agency and email address of tenant requesting work.
[[[Note to Spec Writer, you shall need to describe in the above subparagraph the direction you wish to give the O&M on NCMMS Administrative duties, e.g., entering, closing out service calls and dispatching.]]]
- d) Uses NCMMS for mobile work management practices to the greatest extent practicable. This includes using the NCMMS mobile application for management and input of Work Orders, and documentation of time to complete Work Orders in real-time, when possible.
[[[Note to Spec Writer: Remove if not applicable.]]]
- e) Document in NCMMS Work Orders for all work performed, including routine Work Orders, urgent Work Orders, emergency Work Orders and emergency call back Work Orders.

- f) Generate reports using the NCMMS for the CO or designee as requested and in a format and media as requested.

C.5.12.2.1 Emergency Work Order

The Contractor shall respond to an emergency Work Order immediately during Normal Working Hours. The Contractor shall remain on the job until the emergency situation has been secured and adequate temporary repairs have been made. Permanent repair shall be governed by the repairs provisions in this PBWS. Emergency Work Orders and callback responses are service requests where the work consists of correcting failures that constitute an immediate danger to personnel or property, including broken water pipes, stalled elevators with trapped passengers, electrical power outages, electrical problems that shall cause fire or shock, gas or oil leaks, major air conditioning or heating problems, or any work considered by the CO or designee to be of an emergency nature.

C.5.12.2.2 Emergency Call Back (Beyond Core Coverage Hours)

On occasion, services shall be required to support an activation or exercise of contingency plans or emergency call back outside the Normal Working Hours described. Emergency call back requests are service requests where the work consists of correcting failures that constitute an immediate danger to personnel or property or any work considered by the CO or designee to be of an emergency nature. The Contractor shall respond to emergency call back service request immediately (within the shortest possible time consistent with the mechanic's location). The Contractor shall remain on the job until the emergency situation has been secured and adequate temporary repairs have been made. Permanent repair shall be governed by the repair provisions in this PBWS. The Contractor shall provide a written account of any emergency call back; including costs incurred and plan for permanent correction of the problem, to the CO or designee no later than the morning of the next business day. If the emergency call back is expected to take more than two hours to resolve, the Contractor must get approval from the CO or designee.

C.5.12.2.3 Urgent Work Order Response

The Contractor shall respond to urgent Work Orders within __ minutes **[[[Recommended time is one hour.]]]** during normal working hours. The Contractor shall remain on the job until the urgent repairs have been made. Permanent repair shall be governed by the repair provisions in this PBWS. Urgent Work Orders are those Work Orders where the work consists of correcting failures that interrupt or otherwise adversely impact either GSA operations or building occupant operations. Examples of these types of service requests include, inoperative electrical circuits, extreme temperature complaints, inoperative lighting above a workstation, flush valve stuck open, any malfunctions to equipment that affect the tenant's operations, or any work considered by the COR to be of an urgent nature.

C.5.12.2.4 Routine Work Order Response

The Contractor shall respond promptly to Routine Work Orders (i.e. plumbing and lighting issues) and complete the required work within _____hours **[[[Insert timeframe]]]** of notification. The Contractor shall immediately notify the CO or designee with a written extension request

when the routine service call cannot be completed within the specified timeframe. Routine Work Orders are those Work Orders that do not interrupt or otherwise adversely impact GSA operations or building occupant operations.

C.5.12.3 Data Maintenance

The Contractor shall keep all records and databases current and able to be accessed by the Government. The Contractor is responsible for the accuracy of data in the NCMMS and for entering all data requested for each activity tracked by the NCMMS. Any data that is found to be in error shall be brought to the attention of the Facility Manager and the COR to be noted and discussed to determine the proper resolution. The Contractor shall:

- Update the NCMMS database frequently, including all certifications, inspections records and third-party reports.
- Ensure updates of the equipment list and identified equipment deficiencies as needed throughout the duration of the Contract.
- Ensure all Work Orders include labor hours, costs and closeout notes.
- Check on the status of in progress Work Orders and report to the Government any barriers that can potentially impact successful and timely completion.
- Generate reports for the Monthly Report at the request of the CO, the COR or designee.

C.5.12.4 Reporting

All Work Orders shall document and capture minimally required information, including; Work Order description, resolution information, timestamps, work notes, and other completion information, in accordance with provided training, guidance and standard operating procedures. Monthly reporting of the Work Order status shall include data on all types of maintenance, repairs, service calls (*i.e.*, emergency, urgent, overdue, and tenant complaints), and accounting of deferred, completed, and active Work Orders with estimated completion dates by type of work (*i.e.*, reimbursable, repair, and Work Orders) resulting from testing and inspections, and any equipment out of service.

All additional information requests made by the Government shall be responded by within one business day. All such requests shall be communicated to the Contractor with a detailed explanation of the information that is requested.

C.5.13 Additional Services Indefinite Quantity Provisions

C.5.13.1 General

The CO shall order Additional Services at their discretion. Additional Services shall include any services related to operations, maintenance and repairs, construction, systems upgrades, system operation, or tenant services facilities within the scope of the Contract but, not covered within Basic Services (*i.e.*, not already a requirement of the Contract). **[[[An example of this is when modification to the Contract is in order when new equipment shall either raises or lowers the level of effort required by the Contractor.]]]**

C.5.13.2 Price Proposal for Additional Services Work Request

The Government shall issue the Contractor an Additional Services Work Request (ASWR) for additional work within the general scope of this Contract. The Contractor shall provide a proposal within two working business days of receipt of the ASWR. The Proposal shall include a brief description of the technical approach to completing the ASWR. The ASWR Proposal shall also include detailed pricing on a firm-fixed price basis. At a minimum, the price to complete the ASWR shall include parts and materials, labor and subcontracting costs as described below.

C.5.13.2.1 Parts and Materials

The price for any parts and materials required to complete the ASWR shall include a description of the estimating methodology used by the Contractor to determine the reasonableness of the proposed price, *e.g.*, review of manufacturer catalogs, review of competitive quotes or justification of only one available source for the parts or materials.

C.5.13.2.2 Labor

The price for labor required to complete the ASWR shall identify the labor categories and rates from the price schedule in this Contract. This includes the labor categories and rates for any subcontracts awarded under this Contract. Proposed and actual costs shall be recorded.

C.5.13.3 Additional (Non-Pricing Schedule) Subcontracts

The Contractor shall identify the price of any new, additional subcontractor labor necessary to complete the ASWR and the Contractor's methodology to determine that the level of effort and price of labor is reasonable, *e.g.*, competitive quotes for the work, justification of only one source, and any other additional information to assist the Government in determining the reasonableness of the proposed subcontract(s). The Contractor shall compete subcontractor opportunities for the work to the maximum extent practicable.

C.5.13.4 Indirect Costs (Markup)

The Contractor shall include the material handling cost (*i.e.*, indirect cost, rate or burden) for any materials, parts, or subcontractor costs proposed to complete the ASWR as stated on the price schedule. If no indirect costs (markup) are included in the price schedule, the Contractor shall provide the basis for the indirect cost. When performing work that requires use of subcontractors (provide two or more quotes) and charging subcontractor management fee and/or parts and material handling fee or both, the Contractor shall provide the Government with documentation of vendor proposal(s). If two or more quotes are not obtained, the Contractor will provide justification.

C.5.13.5 Proposal Review

The Government shall review the Contractor's ASWR proposal and may request additional information regarding the technical approach or the price of the prospective ASWR.

C.5.13.6 Additional Services Work Request Ordering and Invoicing

If the Government is satisfied, in its sole and absolute discretion, with the technical approach

and the price of the ASWR, the CO or designee may order the ASWR, in writing, if priced at less than \$2,500. The Contractor shall accept the GSA Purchase Card as a method of payment.

If the ASWR is priced at \$2,500 or greater, the CO may order the ASWR proposed work by a separate requirements Order using GSA Form 300.

C.5.13.7 Cost Documentation

The Contractor shall provide all paid invoices for any materials, parts, and subcontractor costs (certified payrolls and a Release of Claims) following the completion of the ASWR requirements Order work. This documentation shall be provided no later than 30 business days after completion of the ASWR requirements Order work. Documentation for GSA Purchase Card work shall be provided at the time payment is processed.

C.5.13.8 Construction Services

Construction Services valued at less than \$25,000.00 per occurrence shall be added to this Contract through an ASWR. Construction Services are indefinite delivery, indefinite quantity requirements that are related to the basic services provided under this Contract and that the Contractor shall provide at an additional cost to the Government. The cost shall include all labor, supervision, equipment, supplies, and materials necessary to complete the AWSR on a firm fixed price basis. The CO shall execute the requirements Order before the Notice To Proceed will be issued for the Construction Services.

The Construction Services relate to the O&M of the facilities, the equipment detailed in the Contract, i.e., the basic services provided by the Contractor under this Contract, and tenant improvements. Examples of such Construction Services include O&M repairs, systems upgrades, or tenant services within the facilities covered under the basic services of the Contract.

At the request of the CO or designee, submitted as an NCMMS Work Order, the Contractor shall provide a price proposal to accomplish an ASWR within four days of the request. The price proposal shall be completed on the Construction Services Form (see Exhibit 4). The Contractor shall provide a detailed basis of estimate for the total firm fixed price (cost and fee) for performing the Construction Services. **[[[Note to Spec Writer: If you are using Unit Price Agreements, insert the following sentence, otherwise delete it.]]]** If this Contract includes a Unit Price Agreement, the Contractor shall propose the Unit Price for Construction Services. If this Contract includes an Overhead and Profit (markup), the Contractor shall include the Overhead and Profit (markup) in its basis of estimate.

Construction Services valued at greater than \$2,000.00 are subject to the Wage Rate Requirements in accordance with FAR subpart 22.4 and other specific regulatory supplements. Applicable regulatory requirements shall be identified by the CO and included in the AWSR.

Contractor shall update NCMMS to match any changes resulting from Construction Services.

C.5.14 Building Management and Support Services

C.5.14.1 General

Projects for the major repair, replacement or enhancement of the facilities covered under the scope of this Contract are often initiated from the GSA regional offices and awarded to private sector Contractors. Generally these projects are lengthy and complicated in nature, affecting several major building systems during the course of construction. To deliver successful project results and minimize impact on building tenants and daily operations, high levels of coordination and inspection are necessary.

To assist GSA in these efforts, and when requested by the COR or designee through a NCMMS Work Order, the Contractor shall provide reasonable and competent assistance during Normal Working Hours to GSA personnel or other GSA contractors, at no cost to GSA, on performing energy studies, commissioning services, engineering studies, building condition evaluations, project designs within the building, and equipment or system surveys. Such assistance shall include escorting investigatory personnel through spaces in the building in accordance with building security requirements, explaining the operation and condition of equipment and systems to investigatory personnel and providing access to trend data, maintenance records, reference library materials, and other pertinent building technical data to investigatory personnel. The COR or designee shall inform the Contractor as far in advance as possible of the actual date and time these services are needed. Any impact on regular scheduled work shall be identified with the COR and approved in advance for deferment.

C.5.14.2 Miscellaneous Work

Numerous small projects/requirements are generated monthly by GSA and GSA occupancy agencies housed in the buildings covered under the scope of this Contract. Accomplishing these requirements generally requires skilled and experienced general labor, common supplies, and small hand and power tools of the building trades. As part of the monthly price for preventive/predictive maintenance services, the Contractor shall provide a total of ____ hours and up to \$ ____ of parts and supplies per calendar month (hours and dollar amounts are not cumulative to succeeding months) when requested by the COR through a NCMMS Work Order to accomplish discretionary work in the buildings covered by this Contract. The Contractor shall furnish the labor, tools and consumable materials, as necessary, to perform the work. The Contractor shall implement a plan for accurately recording hours of labor and costs of parts and supplies expended. At a minimum, all costs, including labor hours, materials shall be recorded and delivered by the Contractor in the monthly report.

[[[Note to Spec Writer you must determine the number of hours and dollar value of parts to insert.]]]

C.5.14.3 Review of Design Documents

Utilizing the most qualified onsite personnel familiar with the operations of the facilities covered under the scope of this Contract, the Contractor shall review design and construction project documents in accordance with instructions and timeframes provided by the CO or designee. The purpose of this review is to allow the Contractor to comment on any negative impact the

proposed project may have on its ability to operate efficiently the building equipment or systems. This section does not require work from either an architect and/or an engineer under FAR subpart 36.6 **[[[Note to Spec Writer: recommend including hours.]]]**

C.5.14.3.1 Reporting

The Contractor shall provide input or propose ideas that can improve the operations.

C.5.14.4 Inspections Assistance for Space Build Outs

When tenant improvement or space alteration work is completed in the building, the CO or designee shall request that the Contractor inspect the area to verify that the spaces have: appropriately zoned air supply and return ductwork and diffusers and appropriately zoned lighting circuits, all zone HVAC/lighting controls have been adjusted appropriately, and the labeling of breakers in electrical panels and outlet cover circuit designations are complete.

C.5.14.5 Flag Procedures

[[[Note to Spec Writer: Remove if this function is performed by another contractor. Regions need to determine after hour costs and include reimbursable language.]]]

The Contractor shall raise, lower and place at half-staff the United States Flag, agency pennants, and other flags (e.g., POW flag) provided by GSA. This service shall be provided when directed by the CO or designee.

C.5.14.6 Overtime Utilities

The Contractor shall at the direction of the COR through NCMMS Work Order, provide OTU to tenant agencies. The Contractor shall program Energy Management System (EMS) electronically or by hand turn on necessary equipment to provide OTU. OTU are funded by agencies and are considered above standard services. The Contractor does not have to be physically present, but shall ensure that the utilities are scheduled for these hours and are provided for per the OTU request. OTU hours shall be included in the Monthly Report. The Contractor shall track the OTU and have information available at building management request.

C.5.15 Monthly Progress Report

[[[Note to Spec Writer: Include additional reporting requirements, if applicable. Sample of Monthly Report can be found at: [Operations and Maintenance Specification](#).]]]

C.5.15.1 General

The Contractor shall use the GSA-developed reports of monthly progress or other submittal requirements (e.g., quality control, asset inventory), using NCMMS data, to describe the status of maintenance and operations as of the last day of the performance month. The Contractor shall provide reports to the CO or designee as requested and in a format and media as requested with a preference for electronic submittal. The Monthly Progress Report shall be submitted to the CO or designee by the **[[[5th business day of the subsequent month.]]]** This report shall include the: Work Order status of all types of maintenance, inspections, repairs, service calls (highlight overdue and tenant complaints), including deferred, completed and

active (include estimated completion date), by type of work *i.e.*, reimbursable, repair and Work Orders resulting from testing and inspections, and any equipment out of service.

The Monthly Progress Report must also include:

- a. Explanation of any equipment, designed to be controlled by the BAS, operating in manual mode as of the end of the performance month, and of any other overrides to sequences of operations in effect as of the end of the performance month.
- b. Operating schedule changes (manual, programmed or OTU).
- c. Description of any lost time accidents or other safety problems, including incidents involving hazardous materials that occurred during the performance month.
- d. Copies of quality control inspections performed during the month.
- e. Building Management Support Services (utility hours/miscellaneous work) provided during the month.
- f. Monthly water treatment test results.
- g. Recalibration documentation of advanced metering equipment.
- h. When testing is performed, the Contractor shall submit results with the next monthly progress report.
- i. A copy of the updated refrigerant control logs.
- j. The Contractor shall record the fuel (if any) levels monthly and report findings in the Monthly Progress Report.
- k. Review of energy performance trends as of the end of the performance month and description of likely causes of significant changes in energy usage from the same month one year prior.
- l. All inspections, test results, and maintenance performed on Fire Protection and Life Safety Equipment and Systems using the inspection, testing and maintenance forms referenced in the applicable NFPA code or standard.
- m. Meter readings.

C.5.16 Reference Library

[[[Note to Spec Writer: Use language below or adjust this subsection as applicable to their facility.]]]

C.5.16.1 General

The Contractor shall maintain a comprehensive reference library that includes building design or record documents, renovation or equipment retrofit design or record documents, maintenance reference documents, applicable NFPA codes and standards, fire protection system as-built drawings, fire protection system operations and maintenance manuals with copies of approved submittals, fire protection system parts list, fire protection system zoning scheme, fire protection system sequence of operation matrix, HVAC Operations Manual (if one has been developed), building operating plan, energy and other building technical studies, hazardous materials surveys, and other documents necessary to document the design, function, and condition of the building. The Contractor shall safeguard this information in accordance with the provisions of subsection 1.6.2, Safeguarding and Dissemination of Controlled Unclassified Building Information.

SECTION 6 MAINTENANCE SPECIFIC REQUIREMENTS

C.6.0 General

[[[Note to Spec Writer: The CO shall consult with the SME on Contractor's scheduled Preventive Maintenance Plan to confirm this meets GSA's minimal PM requirements. If the Contractor uses the PBS O&M Standards (PM Guides), the Contractor may propose changing the frequency of a preventive maintenance job plan to meet the specific requirements of that particular piece of equipment. Any proposed changes need approval of the CO or designee.]]]

The Contractor shall establish an effective Preventive Maintenance Plan for scheduling and performing scheduled preventive maintenance on all building equipment and systems requiring a preventive maintenance procedure covered under the scope of this Contract. The Contractor shall submit the Preventative Maintenance Plan as part of the Contractor's proposal. This plan will be approved by the CO or designee, the plan is to include the Contractor's approach to maintenance and repair and list of equipment/systems receiving a preventive maintenance procedure as well as the specific maintenance standard or guide describing the preventive maintenance procedure, and frequency. Once approved this Preventive Maintenance Plan must be incorporated into the Building Operating Plan described subsection 5.2.1.f above and Contractor shall update NCMMS within ____ business days [[[Insert number of business days]]] to match the Government approved plan. The Contractor shall complete preventive maintenance in the month scheduled. Contractor shall provide accurate and timely tracking of preventive maintenance in NCMMS and minimize preventive maintenance backlog. Preventive maintenance planning, reporting and backlog are used in PBS national performance measures and GSA quality assurance.

C.6.1 Maintenance Standard

The Contractor shall submit for approval to the CO or designee the preventive or predictive maintenance standards proposed by the Contractor. These standards must be based on a combination of equipment manufacturers' recommendations, the Public Buildings Service O&M Standards, sensor technology, diagnostic software, the Contractor's experience and other sources. The Contractor must obtain approval from the CO or designee, for each piece of equipment where the manufacturer or designer recommends preventive maintenance. If the Contractor uses the most current version of the preventive maintenance guides then the Contractor assumes responsibility that the preventive maintenance guides are all inclusive of all the required preventive maintenance requirements for equipment and systems covered in this contract. The equipment requiring Contractor's proposed preventive or predictive maintenance standards or guides includes all of the equipment and systems when any of the following equipment characteristics apply:

- a. The equipment normally requires periodic replacement of consumable components.
- b. The equipment normally requires periodic or occasional cleaning.
- c. The equipment has moving parts.
- d. The equipment is prone to failure before overall obsolescence of the system it serves.
- e. The equipment is of a type itemized in the NETA, Maintenance Testing Specifications.

- f. The equipment requires inspection, testing and maintenance in accordance with NFPA codes and standards.
- g. The equipment requires maintenance in accordance with any other provision of this Contract.

The Contractor shall schedule preventive maintenance and begin maintenance on new equipment in the NCMMS, when the extended maintenance service is completed by the installer and the Contractor ensures that all pertinent warranty information and proposed maintenance plans are sufficient to uphold warranty obligations.

C.6.2 Boiler Systems

C.6.2.1 General

Boiler systems are an essential part of GSA's ability to provide the environment needed for its tenants to perform their mission. The Contractor shall operate and maintain the boiler systems to preserve the safety of personnel, the protection of the property, and the comfort of the tenants.

C.6.2.2 Operation

The Contractor shall operate boiler systems according to established operational standards outlined in the current Building Operating Plan. The intent is to operate as efficiently as possible while protecting all assets from freezing conditions. Boiler operations shall be logged daily while in operation. The Contractor shall be familiar with the requirements of the local AQMD and shall ensure operating permits for boilers, and all other emissions producing equipment regulated by the AQMD are up-to-date and have copies available for the CO or designee. Operating readings shall be logged daily and posted during boiler operation. During curtailment operations, all diesel fuel used shall be reimbursable by the Government.

C.6.2.3 Boiler Maintenance

The Contractor may use GSA's preventive maintenance standards to perform maintenance or the manufacturer's recommended maintenance procedures, or any combination as long as the method is submitted to the CO or designee for prior review and approval. All safety devices shall be kept in good operating condition.

C.6.2.4 Testing and Inspecting

The Contractor shall provide boiler inspections, including internal and external (operating) inspections and tests described in part 2 of the National Board Inspection Code (NBIC) 2017 or later versions. The operating or external inspection shall be done during the heating season while the boiler is under load. The internal testing shall be scheduled in the off season. Details on what the Contractor shall do to get the boiler ready for inspection prior to the inspector's arrival shall be determined between the Contractor and the inspection contractor. All unfired pressure vessels that are in excess of 15 gallons and a designed operating pressure of more than 60 psi shall be inspected annually, either during the external or the internal inspection of the boiler. Inspections shall be performed by inspectors certified by the National Board of Boiler and Pressure Vessel Inspectors, who shall be employed by an independent firm specializing in

boiler and unfired pressure vessel inspections. The Contractor shall implement boiler shutdown and summer lay-up procedures to protect the boilers from corrosion during the off-season. A combustion (flue gas) analysis shall be performed annually at the beginning of each heating season on all fossil fueled boilers. This test helps the Contractor adjust the boiler to its optimum efficiency. A report that includes the manufacturer's efficiency rating by design shall be provided to the COR within seven business days of the test that shows the readings before any adjustments are made. A follow-up report shall be provided to the COR within seven days after any adjustments are made to document compliance.

C.6.2.5 Reporting

Daily logs of the boiler shall be annotated by the Contractor on an approved boiler log and kept at the boiler. After the third-party inspection of a boiler, the Contractor shall have the inspector complete GSA Form 349 (Inspection Report of Boiler) for each boiler inspected. After the third party inspection of an unfired pressure vessel, the Contractor shall have the inspector complete GSA Form 350 (Inspection Report of Unfired Pressure Vessel) for each vessel inspected. These two forms, the GSA Forms, 349, and 350 shall be kept in a file, while a third form shall be kept on the equipment itself. This third form is GSA Form 1034 (Certificate of Inspection). All inspections and tests shall also be scheduled and annotated in the NCMMS and reported in the monthly report.

C.6.3 Air Distribution Equipment

C.6.3.1 General

The purpose of air distribution systems is to maintain acceptable indoor air quality for building occupants. These systems are applied in various locations, including industrial spaces, warehouses, kitchens, office space, computer rooms, laboratories, and courtrooms. The scope of operations and maintenance for air distribution systems includes all components as part of the system. This includes all types of air handling equipment owned or managed by GSA, such as packaged units, rooftop units, fan coil units, and direct expansion that are part of the entire building system.

C.6.3.2 Operation

The Contractor shall operate air distribution systems in accordance with their design and the approved sequence of operations and any other requirements within this Contract. The Contractor shall follow ASHRAE 202-2103 (Commissioning Process for Buildings and Systems) or later versions, if superseded, when operating this type of equipment. The Contractor shall be responsible for making immediate adjustments or corrections that fall within the proposed maintenance plan, generated Work Orders and any other requirements under this Contract. The Contractor shall make recommendations and perform adjustments to controls, adjust BAS settings, correct set points, and restore equipment to automatic operation as approved by the CO or designee. The Contractor shall identify all alarm points with originating point identification information (device ID, point number, description) to manipulate the system to monitor conditions, track and trend operational criteria. The Contractor shall make every reasonable effort to protect all assets regarding air distribution systems and associated equipment listed in this Contract from freezing conditions.

C.6.3.3 Maintenance

The Contractor shall use GSA preventive maintenance standards or the manufacturer's recommended maintenance procedures, or a combination of the two procedures to perform maintenance as long as the method is submitted to the CO or designee for prior review and approval. This as well as all preventive maintenance covered in this contract will be addressed in the Contractor's submitted Preventive Maintenance Plan. The equipment requiring the Contractor's proposed maintenance plan shall include all of the building equipment associated with the air distribution systems up to and including the final discharge of air into occupied spaces. At a minimum, the maintenance plan shall include applying lubricants, cleaning fan housings, fans, coils, dampers, air diffuser/grilles, air handling unit (AHU) sections, and equipment rooms, and replacing consumable parts or components.

C.6.3.4 Replacement of Air Filters

[[[Note to Spec Writer: Specify MERV rating.]]]

The Contractor shall use high efficiency air filters when replacing the filters in air handlers and other equipment that use air filtration. The Contractor shall only use air filters with known Minimum Efficiency Reporting Value (MERV), as defined in the ANSI/ASHRAE Standard 52.2 and required in accordance with the most current PBS-P100. The Contractor shall replace air filters with the air filters that have the highest MERV value consistent with the feet per minute of the fan. The Contractor shall maintain minimum ventilation standards in ASHRAE Standard 62.1 with the current revision year. Prior to installation, the COR shall approve the filters to be used. At a minimum for an AHU with pre- and post-filters, the Contractor shall replace the pre-filters quarterly or as deemed necessary by the Magnehelic gauges or BAS-connected monitoring devices, and the post filters annually or as deemed necessary by the Magnehelic gauges. The rooftop unit, variable air volume, power Induction unit), fan coil, computer room, or any other air distribution filters shall be changed as required by the Preventive Maintenance Plan, but at least annually.

C.6.3.5 Testing and Inspecting

The Contractor shall ensure that air distribution components operate on a system level per the design intent and sequence of operations by testing and inspecting the units. The testing of the air distribution system shall also include the integration with other equipment in the building including chillers, boilers, variable air volume system component, fans, ductwork, and air intakes. The Contractor shall conduct regular inspections of air filters to ensure that the filters are changed as recommended by the manufacturer or when they have become clogged. The Contractor shall conduct inspections of the condensate drip pans of all AHU, A/C package units, window A/C units, and other equipment items and systems that physically have drip pans to ensure that they drain properly. Such inspections shall be conducted in accordance with the tour program and be performed no less frequently than _____. **[[[Note to Spec Writer to determine frequency as regional protocol requires.]]]** Pans that are not level or that leak shall be reported to the CO or designee. All drip pans shall be treated with an appropriate biocide to control the growth of algae, mold or other organisms or fungi. If any condensate pans are inaccessible, the Contractor shall notify the CO or designee immediately.

C.6.3.6 Reporting

The Contractor shall report and enter into the NCMMS any and all activities performed with respect to air distribution system and its components, including Work Orders completed.

C.6.4 Chiller Systems

C.6.4.1 General

Chiller systems are an essential part of GSA's ability to provide the environment needed for its tenants to perform their mission. The Contractor shall operate the chiller to preserve the safety of personnel, the protection of the property, and the comfort of the tenants.

C.6.4.2 Operation

The Contractor shall operate the chiller systems according to established operational standards with manufacturer's guides, industry standards or as otherwise directed by the CO or designee. The intent is to operate as efficiently as possible while protecting all assets. Chillers shall be logged daily while in operation utilizing a GSA-approved chiller log.

C.6.4.3 Maintenance

The Contractor shall use GSA's preventive maintenance standards or the manufacturer's recommended maintenance procedures, or a combination of the two to perform maintenance, as long as the method is submitted to the CO or designee for prior review and approval. Maintenance shall be accomplished by the chiller manufacturer's authorized service technician.

C.6.4.4 Testing/Inspecting

Nondestructive Chiller Tube Analysis (Eddy Current) - Chillers with tube and shell heat exchangers, both evaporator and condenser, shall have an eddy current test performed every three years. The test shall be performed by a Level II technician, certified by the American Society for Nondestructive Testing, per SNT-TC-1A - Personnel Qualification and Certification in

Nondestructive Testing/Inspection. The test shall be performed in accordance with current American Society of Mechanical Engineers standards. Refer to current Preventive Maintenance Guide for additional requirements. The Contractor shall take pictures of the tubes, tube sheets and end plates of water cooled chillers with tube and shell heat exchangers after the removal of the end plates prior to brushing the tubes and again after the brushing of the tubes. These pictures shall be uploaded into the NCMMS. The Contractor shall notify the CO or designee at least two business days prior to the removal of the end plates so that GSA has the opportunity to observe the condition of the tubes right after the removal of the end plates. All inspections and tests shall also be scheduled and annotated. Contractor shall provide the CO or designee with two copies of the written report within 14 business days of the test. The report shall include findings and recommendations. The Contractor shall document the report by uploading it into the NCMMS.

C.6.4.5 Reporting

Daily logs of the chiller(s) shall be annotated on an approved chiller log and kept at the chiller or the onsite Contractor's office and uploaded into the NCMMS. With low pressure chillers daily logs shall include purge run times and pump out times. Logs are to be Included in the monthly report.

C.6.5 Cooling Towers

[[[Note to Spec Writer: If your Region has a Dry Cooler you shall need to include the language for that system]]] [[[Note to Spec Writer: Some cities provide a sewer credit for the evaporation of cooling tower water, if applicable required the Contractor to apply for such credit.]]]

C.6.5.1 General

The cooling tower equipment is a critical component to HVAC operations. By design this device removes heat in the condenser water loop by the process of evaporation. In this process the returning water can take on properties that are detrimental to the proper functions of the HVAC system. The Contractor shall ensure proper maintenance of this equipment in order to ensure proper HVAC operations.

C.6.5.2 Operations

Due to factors such as geographic location, altitude, local weather conditions, and prevailing winds, etc., setting and maintaining a set-point for water temperature is a complex process that has high local variability. Therefore, the Contractor shall to ensure that the Contractor staff understands the established control sequences for the operation of the cooling tower. The Contractor shall propose a better sequence that offers greater efficiency. Before enactment of the new sequence, the Contractor shall submit the proposal to the CO or designee for consideration and approval.

C.6.5.3 Maintenance

Due to the evaporation process taking place inside the tower, regular cleaning of the tower to minimize the accumulation of dirt and scale is required. The Contractor shall ensure proper

maintenance of the equipment by inhibiting and removing mineral scale, corrosion, bacterial contamination, and general fouling of the water and by physically cleaning the tower on a regular basis. The Contractor shall use GSA's preventive maintenance standards to perform maintenance, or use the manufacturer's recommended maintenance procedures, or a combination of both as long as the method is submitted to the CO or designee for prior review and approval.

C.6.5.4 Testing

The Contractor shall test the water in accordance with the water treatment section of this contract. All equipment associated with the cooling tower shall be checked for proper operation and free of scale, corrosion and other contamination affecting performance of the tower. Testing must include vibration cutout switch where installed.

C.6.5.5 Reporting

All maintenance and all service calls associated with cooling towers shall be reported in the NCMMS. Because of the importance of this critical equipment, GSA requires the Contractor advise the CO immediately if it is not operating properly or is offline for any reason.

C.6.6 HVAC Water Management

C.6.6.1 General

HVAC water management is the maintaining and operating, testing and reporting of the cooling tower water system plus the heating and chilled water loops and ramp de-icing loops, as directed by the HVAC Water Management Plan. The goal of HVAC water management is to manage, operate and maintain the water systems in the HVAC equipment at optimum performance whenever needed to protect the building systems assets that maintain satisfactory indoor environmental quality for all tenants.

C.6.6.2 HVAC Water Management Plan

The Contractor shall prepare a comprehensive water treatment plan that includes operating, cleaning, maintenance, corrosion monitoring, seasonal equipment layups, water treatment for both open and close loops and reporting on all related actions and analysis. The plan shall be specifically detailed to provide the CO or designee a quality assurance guide by which to assess the operating, maintaining, testing and reporting of all activities associated with the HVAC water systems. The Contractor shall ensure compliance with GSA Order PBS 1000.7 Drinking Water Quality Management and Appendix E of the PBS Desk Guide for Drinking Water Quality Management. The Contractor shall provide all equipment, chemicals, and services (including application) required to control corrosion, scale, algae, and bacterial growth in all HVAC equipment and systems throughout the building. All equipment installed for water treatment and corrosion monitoring shall be conveyed to the Government at the end of the Contract. This Plan will be submitted to the CO or designee within 60 days of Contract start date.

Water treatment is a constant balancing act, which means that an effective treatment plan has to be flexible in its ability to meet requirements. A "one size fits all" concept does not work well

when creating an effective and efficient water treatment plan. Size, location, geography, and altitude all play a factor in deciding the best water treatment plan.

C.6.6.3 Operation

The Contractor shall control corrosion, scale, algae, and bacterial growth in all HVAC assets and systems throughout the building. The Contractor shall be responsible for compliance with all applicable local sanitation requirements, discharge regulations, district air quality regulations, and other environmental laws and regulations. The scope of this work extends to related safety equipment (e.g., emergency eyewash stations), all of which shall be maintained in accordance with all applicable OSHA standards.

C.6.6.4 Maintenance

The Contractor shall implement an effective HVAC water loop maintenance plan as part of a comprehensive HVAC equipment maintenance program. This plan shall include the methods, procedures, references and industry standards that the Contractor has elected to use to execute the maintenance plan. The plan shall also detail procedures, special tools and equipment, treatment procedures, chemicals and water chemistry criteria, preventive maintenance and testing frequencies, and anticipated schedules for shutdown, start up, and cleaning.

C.6.6.5 Testing and Inspecting

The Contractor shall establish water treatment and testing frequencies that give an accurate and regular indication of whether the maintenance performed is adequately keeping the HVAC system water within the limits established in the HVAC Water Management Plan. GSA has a list of standard closed loop and open loop parameters that set the maximums and minimums for the specific system design. Those criteria are listed at the end of this section.

Planned testing activities shall address the following issues:

The Contractor shall perform a comprehensive initial water treatment analysis (laboratory analysis) within 30 calendar days of the Contract award to assist in developing the HVAC Water Management Plan. This initial analysis shall establish a baseline and shall be used to inform and validate the effectiveness of the Contractor's Plan.

- a) The testing frequencies shall be established by the Plan based on manufacturer's recommendations with input from the COR and the facility management staff.
- b) A qualified independent water treatment specialist shall be engaged to draw a set of water samples at a frequency established by the Plan and as agreed to by the CO or designee. Tests shall be performed as described in the water treatment plan and test results uploaded in the NCMMS as an attachment to the Work Order.
- c) All samples shall be analyzed and a monthly report containing all pertinent information, relative to the conditions found, shall be submitted to the CO or designee with the monthly progress report.
- d) In facilities where makeup water is metered, makeup water quantities used shall be tracked and reported. Types and quantities of chemicals used shall be tracked in the NCMMS and reported on also in the monthly progress report.

- e) If testing results are outside of established parameters in the Plan, the Contractor shall immediately investigate the cause of the deficiency and implement corrective action to restore the system to established parameters. The Contractor shall immediately notify the CO, or designee of the situation, explain the cause of the non-compliance condition and the actions taken to remedy the problem.
- f) After corrective action has been implemented, the Contractor shall perform a second test to verify that the system is operating within established parameters.
- g) All testing and retesting results shall be entered into the NCMMS by the Contractor.
- h) Glycol-water solutions in all building systems shall be tested monthly to determine the percentage glycol. The glycol water solution in all building systems shall be tested annually for pH, reserve alkalinity, inhibitor levels, and degree of contamination. If testing results indicate that glycol or additives must be added to maintain proper chemistry then the Contractor shall be responsible for glycol or additives additions. If the test results indicate full replacement is necessary then the Government shall be responsible for all associated costs. The test results must be documented in NCMMS, using (virtual) meters, where practical.

C.6.6.6 Reporting

The initial analysis of the HVAC water system(s) shall be reported to the CO and designee immediately after the results are known. It shall be the responsibility of the Contractor to correct any non-compliant conditions at no cost to the Government as soon as a solution has been reviewed and approved by the CO or designee. Any initial cost that exceeds the repair threshold shall be a shared liability. Once the parameters are within the established tolerances the Contractor shall be responsible to maintain equipment and chemistry at the Contractor's cost.

The periodic water treatment and testing reports shall be included in the monthly progress reports. All other analysis reports performed to analyze or mitigate non-conforming issues shall be brought to the attention of the CO or designee immediately. The monthly progress reports shall include the following items:

- a) Testing dates, procedures and (in-house and independent) results,
- b) Make up water volumes used,
- c) Chemical amounts and types added to the system(s),
- d) Tolerance and range criteria set forth in the Plan as compared to actual testing results,
- e) Remediation actions taken during the month,
- f) Trending data for a running 12 month period on all measures as they compare to the tolerance and acceptability range parameters set forth in the Plan, and
- g) Any other pertinent data/info to complete a comprehensive profile of the HVAC water system(s).

The Contractor shall compare cooling tower water treatment results with the Chiller Operating Log. Trending and best practices shall be identified and proposed to CO or designee for review and approval prior to implementation in an effort to establish the most efficient systems operations based on conditions.

Table of GSA established HVAC water management criteria

Open Loop

Chemistry Tests	Frequency of Test	Operating Ranges
Tower Water Conductivity	Auto Blow down: Weekly, Monthly Manual Blowdown: Daily	160-2400 mmHOS (110-1600 ppm)
Makeup Water Conductivity (Hardness)	Auto Blow down: Weekly, Monthly	40-600 mmHOS (30-400 ppm)
pH Test	Daily, Weekly	7.5 to 9.5
Corrosion Monitoring (Coupon Test)	Quarterly (3 months)	Iron: 2 to 5 mils/ year Copper: 0.2 to 0.5 mils/ yr
Bacteria Testing	Quarterly (when system is running) and whenever system has been shut-down for 5 consecutive business days	Max: 1000 cfu/ml (colony forming units/ ml)
Chlorides	Weekly, Monthly	Max: 250 ppm as Cl Max: 410 ppm as NaCL
Sulfites	Weekly, Monthly	50-100 ppm SO ₃ 80-160 ppm Na ₂ SO ₃
Corrosion Inhibitor Residual	Auto Chem. Feed: Weekly, Monthly	Defined by Consultant
Oxidizing Biocide Residual	Auto Chem. Feed: Weekly, Monthly	Defined by Consultant
Legionella pneumophila, Bacteria Testing		When total bacteria >1,000 cfu/ml (repeat treatment and testing until total bacteria <1,000 and L. pneumophila bacteria <10 cf/ml <u>Max:</u> 10 CFU/ml

Closed Loop

Chemistry Tests	Frequency of Test	Operating Ranges
pH	Monthly	7.5-9.5
Total Dissolved Solids (TDS) or Conductivity	Quarterly (3 months)	Maximum: 2000 ppm or (2500 μ S/cm)
Polyphosphates (PO ₄)	Monthly	10- 20 ppm
Sulfites	Monthly	50-100 ppm SO ₃ 80-160 ppm Na ₂ SO ₃
Bacteria Testing	Monthly	Max: 10 ³ cfu/ml (colony forming units/ ml)
Corrosion Monitoring (Coupon Test)	Bi-Annually (6 months)	Iron: max. 0.5 mils/ year Copper: max. 0.2 mils/ yr
Corrosion Inhibitor Residual	Monthly	Defined By Consultant
Bacteria Testing	Quarterly (when system is running) and whenever system has been shut-down for 5 consecutive business days <u>Max:1000CFU/ml</u> Quarterly (when system is running) 10 CFU/ml	When total bacteria >1,000 cfu/ml (repeat treatment and testing until total bacteria <1,000 and L. pneumophila bacteria <10 cf/ml)

C.6.6.7 Chemical Free Water Treatment System

[[[Note to Spec Writer. If the building has a Chemical-Free Water Treatment System insert this clause. Also insert the type of system and locations.]]]

HVAC loops that are treated by chemical-free water treatment systems shall be tested and maintained by an authorized Original Equipment Manufacturer (OEM) certified vendor. The Contractor shall provide a qualified independent water treatment specialist to draw a set of water samples monthly. Tests shall be performed as described in the water treatment plan. Samples shall be analyzed and a monthly report containing all pertinent information, relative to the conditions found, shall be submitted to the CO or designee with the monthly progress report. In facilities where makeup water is metered, makeup water quantities used shall be tracked and reported.

C.6.7 Domestic Plumbing Systems

C.6.7.1 General

Domestic plumbing systems, including drinking fountains and filters, restrooms, kitchens, locker rooms and showers, water heaters, irrigation systems, stormwater structures/BMPs (e.g., structural or engineered control devices and systems such as retention ponds, to treat polluted F), backflow preventers, decorative fountains, and outdoor pools, shall be maintained, repaired, and kept functional to the point of service delivery as defined by the utility company. The Contractor shall ensure all system drains, including storm drainage and roof drains, remain clear and unobstructed. The Contractor is responsible for maintenance of stormwater management infrastructure (infiltration basins or trenches, rainwater harvesting/cistern systems, bio-retention, catch basins, underground sand filters, other proprietary storm filters, and wet and dry ponds). The Contractor shall take any necessary steps to prevent odors emitting from drains or other plumbing systems into occupied space, including keeping water in traps appropriately maintained. The Contractor shall clear toilet and sink blockages, as necessary. Such requests shall be transmitted to the Contractor by the CO or designee through Work Order procedures. When replacing plumbing fixtures, the Contractor must use the most reduced water usage device per the PBS-P100 and as approved, in advance, by the CO or designee. (For additional information guidance can be found at the web site in document titled "Web Links" at: [Operations and Maintenance Specification](#). The Contractor shall ensure compliance with GSA Order PBS 1000.7, Drinking Water Quality Management, and Appendix E of the PBS Desk Guide for Drinking Water Quality Management.

C.6.8 Lighting Systems

C.6.8.1 General

Indoor Environmental Quality (IEQ) includes access to daylight and views and occupant control over lighting levels at their workspace. It is the goal of this requirement to maintain acceptable IEQ by establishing and maintaining adequate lighting levels throughout the facility interior and exterior to allow the tenant(s) to be productive, feel secure, and egress in case of emergencies. Exceptional lighting shall also save energy, be automatically controlled to respond to daylighting levels, not be a negative impact to the tenants or visitors and be appropriate for the

requirements in all occupied areas. Illuminated areas of responsibility typically include entrances, landings, steps, sidewalks, parking areas, garages, arcades, highly decorative courtrooms, historic fixtures, fountains, security bollards, stairwells, auditoriums, flagpoles, building-mounted fixtures, pole lighting, elevator car interior lighting and ground lighting located adjacent to the facility and extending to the property line. Exemptions include elevator exterior car lighting, associated hoist ways and machine room lighting, specialty lighting integral to artwork, experimental fixtures, and some lighting control systems to be identified by the CO. For agency-owned specialized lighting systems the Contractor shall not be responsible for the controls (front end). The Contractor shall be responsible for replacement of ballasts, lights and drivers. The Contractor shall not be responsible for requirements lighting associated with furniture.

C.6.8.2 Operation

To maintain operating consistency of illumination in the workspaces, the illuminance levels shall need to be adjusted through the reprogramming of existing fixtures, or by installing additional hardware or software under the guidance of the CO or designee. These adjustments shall be made without changing fixtures if possible (e.g. automatic lighting controls, tuning dimmable ballasts, and de-lamping). The Contractor is advised that while the PBS-P100 establishes target lighting levels, aspects such as lighting quality, specific tenant requirements, energy efficiency, and other individual factors also have an impact on the application of lighting in spaces.

When tenant improvement or space alteration work is being planned in the building, the CO or designee shall request that the Contractor be a part of the planning and inspection in the space to verify that all lighting levels and controls operate as required for the space. The Contractor must immediately report to the CO or designee obvious problems or conditions that shall potentially affect the efficient operation of the building or create a negative impact on the tenant as a result of tenant improvement.

The Contractor shall assist in a curtailment program in consultation with the CO or designee. The Contractor shall implement all approved curtailment measures which typically include turning off or de-lamping unnecessary lighting, or implementing setback schedules to create a more energy efficient lighting strategy in accordance with the curtailment program. This shall at times require knowledgeable Contractor staff familiar with the building's BAS software so that modifications to lighting schedules can occur. Lighting replacements as part of a curtailment program shall qualify for a utility rebate and are therefore subject to the rules set forth by the participating utility. The Contractor must investigate the potential for rebates for any lighting replacement activities for which they are responsible. New lighting components shall be tested by an accredited national laboratory (UL or designated equivalent) according to the PBS-P100 Guidance. Replacement components shall be of equal or greater energy efficiency and life expectancy.

C.6.8.3 Maintenance

The Contractor shall respond promptly to routine Work Orders for all lighting issues. The Contractor shall replace failed lamps, LEDs and/or ballasts, with the most efficient products available in accordance with existing building standards defined by the PBS-P100 or as otherwise directed by the CO or designee. In lieu of such standards, lamps shall be replaced with the most efficient products available matching type and color temperature of other lamps in visual range of the replacement.

The Contractor shall establish and implement a recycling program for fluorescent lamps and other light bulbs in accordance with U.S. Environmental Protection agency and GSA standards. All handling, storage, labeling, reporting and disposal of mercury containing lamps shall be in compliance with Universal Waste Rule guidelines, guidance can be found at the web site in document titled "Web Links" at: [Operations and Maintenance Specification](#).

Hazardous Wastes not subject to the Universal Waste Rule guidelines must be managed in accordance with 40 C.F.R. part 260. Universal Wastes (*i.e.*, fluorescent lamps, solid state lighting (SSL) components, and certain batteries) subject to the Universal Waste Rules guidelines shall be recycled or disposed of as Hazardous Waste. Preference is given to recycling of intact items. Replacement and proper disposal of all burned-out ballasts, including PCB ballasts, shall be the responsibility of the Contractor (see subsection 5.5.9). All lighting changes, Work Orders, fixture schedules and inventory lists, shall be input into the NCMMS and updated regularly.

Replacing incandescent or fluorescent lamps in existing fixtures with lamps of differing design or light sources requires the input and approval of the CO or designee, and advisably a lighting expert plus the energy program manager, to ensure a successful replacement. If SSL LEDs are being considered as a replacement, the Contractor shall experiment with a proposed LED replacement lamp or fixture before a widespread replacement is undertaken to ensure that all lighting criteria are met with respect to required illuminance levels, tenant satisfaction, light distribution, temperature of the lamps, Color Rendering Index (where important to the requirements) energy efficiency, and safety standards. This is a key consideration in performing satisfactory lighting operations and maintenance.

There shall be light ballasts containing PCBs in the buildings covered by this Contract. Replacement and proper disposal of all burned-out ballasts, including PCB ballasts, shall be the responsibility of the Contractor. Fluorescent lamps and ballasts, SSL components, exit light fixtures, batteries, and other items in any quantity subject to the Universal Waste Rules for Hazardous Waste Management shall be stored and disposed of in accordance with State requirements. In addition, all fluorescent lamps and ballasts shall be recycled and records maintained. The Contractor shall include a hazardous waste manifest of disposed items in the monthly report. The Contractor shall continuously update the inventory of all new and existing lamps, fixtures and SSL. The use of bulb crushers is strictly prohibited.

Records including Bill of Lading or receipt of recycling must be obtained for each Universal Waste disposal action. Any other lighting related waste (*i.e.*, LEDs and non-PCB/DEHP light

ballasts) shall be properly characterized and disposed of in accordance with the Resource Conservation and Recovery Act; recycling is preferred method of disposal. Local area recycling programs shall provide information on accepted electronic lighting waste. Receipt of recycling for electronic or electronic-like waste shall be maintained and included in the Monthly Progress Report.

[[[Note to Spec Writer- If your region has a separate elevator contract, a review of the elevator contract for this building is necessary to determine this scope below. Optional based upon elevator requirements for building.]]]

The Contractor shall not be responsible for maintaining lighting within hoist ways, elevator machine rooms, the pit, car top or elevator cars, including all emergency lighting; provided however, that the Contractor shall be required to supply the replacement lamps to the elevator contractor.

C.6.8.4 Testing and Inspecting

Any and all controls that adjust lighting levels or schedules of operation shall be monitored and tested as necessary.

C.6.9 Electrical Switchgear and Switchboards

Contractor shall perform all preventive maintenance, testing and inspections of electrical distribution, switchgear, high voltage (HV) switches, transformers and all associated equipment. The Contractor shall ensure compliance in accordance with National Electrical Testing Association guidelines for the inspection, testing and maintenance of electrical distribution and switchgear type equipment. The Contractor shall also comply with NFPA 70B. When such testing, maintenance or repair interferes with building operations, it shall be performed after Normal Working Hours without additional cost to the Government. The Contractor shall coordinate all utility shut down scheduling with the electrical utility company; the Contractor shall be responsible for all costs associated with the utility shutdown. The Contractor shall coordinate power shutdowns with the building CO or designee. The Contractor shall submit a schedule and shut down plan at least two months in advance to the CO or designee for approval.

C.6.10 Emergency Power Equipment

[[[Note to Spec Writer: Remove if there are no emergency and standby power systems or if this section is covered under another PBWS.]]]

C.6.10.1 General

The Contractor shall ensure that all standby and emergency power equipment and related systems are ready to respond at all times to protect the occupants of the building and to maintain critical services during the event of a normal power outage. These services include- the performance, inspection, testing, acceptance, and preventive maintenance and repair of standby and emergency power equipment, supplies, electricity distribution from the generators, and fuel distribution to the generators.

C.6.10.2 Operation

[[[Note to Spec Writer: If it is your regional policy for the government to buy the fuel for generators, you will need to modify this Contract sub section specification to your regional policy.]]]

All Fuel tanks shall be filled by the Government or the previous contractor at the beginning of the Contract period and by the Contractor at the end of the Contract period. The Contractor shall check and record all diesel or propane fuel tank levels monthly and record in the NCMMS.

The Contractor is responsible for any consumables used during day-to-day operation of a generator, i.e., exercising the generator and related electrical components, testing of oil and fuel reserves, and fuel tank filling. The Contractor shall be reimbursed for the cost of the fuel for fuel consumed by the operation of a generator for an extended period (more than four hours per event) or due to a power loss. If the operation of the generator is caused by Contractor negligence, the Contractor shall be liable for the full cost of refueling. The Contractor shall not allow the fuel level to drop below 70 percent. When the fuel level drops to 70 percent, the Contractor shall notify the CO or designee of the need for refueling and the cost associated and receive approval from the CO or designee prior to refilling the tank. The Contractor shall provide fuel up to **[[[insert average annual fuel cost]]]** per Contract year. The Contractor shall maintain a running log containing the amount of fuel used and the log must be available to the CO or designee upon request. The Government shall pay for all fuel after the **[[[insert average annual fuel cost]]]** limit is reached each year the contract is in effect. Fuel oil shall be tested by a qualified third party vendor/subcontractor at minimum annually. The analysis and recommendations shall be provided to COR. Contractor shall take corrective actions and follow recommendations provided in the analysis, and document within NCMMS (Work Orders). Reports and analysis shall be uploaded as attachments to the asset record. Fuel oil must be conditioned and treated to maintain the minimum quality standards established in American Society for Testing and Materials (ASTM) D396-08a, "STANDARD SPECIFICATION FOR FUEL".

C.6.10.3 Maintenance

The Contractor shall ensure a preventive maintenance schedule is developed and executed in conformance with manufacturers' equipment recommendations and the following NFPA standards:

- NFPA 110, Standard for Emergency and Standby Power Systems
- NFPA 111, Standard on Stored Electrical Energy Emergency and Standby Power Systems

C.6.10.4 Testing and Inspecting

Testing shall include the generator(s), electricity transfer components, oil supplies, and fuel supplies. The Contractor shall arrange for monthly testing of the generators and the transfer switching with a licensed and certified provider. **[[[Note to Spec Writer, if region desires to have emergency generator testing done after hours, insert this sentence. Testing shall be conducted after hours at no additional cost to the Government.]]]** The Contractor shall be allowed to perform the monthly generator and transfer switch testing provided that the Contractor has been trained by an authorized Generator OEM technician/company, a written

procedure is developed that complies with NFPA and the training is documented and annual refresher training is conducted.

[[[Note to Spec Writer: Identify if outside load bank is required to perform testing.]]]

- a) **Generator Oil.** Generator oil shall be tested by a qualified person at least annually and analysis and recommendations shall be provided to CO or designee. Testing shall be performed per ASTM D6595 (Wear Metals in Used Oils) and ASTM D445 or ASTM D72799 (Viscosity) and recorded in the NCMMS. Contractor shall take corrective actions and follow any recommendations provided from the testing facility. NOTE: Changing of oil in the generator is only to be performed based on testing and analysis recommendations from a UL approved laboratory or annually and not to be done arbitrarily in a periodic schedule. Oil filters shall be changed periodically per manufacturer's recommendation or industry standards.
- b) **Diesel Fuel.** Fuel shall be tested by a qualified third party contractor or subcontractor at least annual and analysis and recommendations provided to CO or designee and entered into the NCMMS. The Contractor shall take corrective actions and follow any recommendations provided in the analysis. Fuel oil shall be conditioned and treated and a preventive maintenance plan established to maintain the minimum quality standards established in ASTM D396-1, "STANDARD SPECIFICATION FOR FUEL OILS".
- c) **Glycol-water solutions.** Glycol-water solutions shall be tested regularly to determine the percentage glycol, pH, reserve alkalinity, inhibitor levels, and degree of contamination and the Contractor must complete required corrective action based on test results. In addition, the Contractor shall maintain minimum freeze protection and inhibitor levels. The glycol solution shall be checked at least once a year and in accordance with the manufacturer's recommendations and results entered into the NCMMS.

C.6.10.5 Reporting

The Contractor shall report the status of the emergency generator and automatic transfer switch in the monthly report, including operational status and present condition, planned or completed preventive maintenance and repairs, main and day tank fuel levels, and fuel purchases.

C.6.11 Oil Analysis and Oil Changes

C.6.11.1 General

Proper care of all systems that provide a safe and functional environment is a critical component of operations. Oil analysis shall be conducted to achieve that goal using a consistent methodology for data collection, analysis, and historical trending and record.

C.6.11.2 Operations

The Contractor shall establish and implement an oil analysis program incorporating the manufacturer's recommendations. Periodic oil analysis shall include chillers of 50 tons or greater cooling capacity. Generator oil additives shall not be used.

C.6.11.3 Testing and Inspecting

Periodic oil analysis shall be performed prior to annual maintenance requirements so that results shall be considered in performing preventive maintenance.

C.6.11.4 Reporting

Where oil analysis indicates a need for corrective action, an appropriate Work Order shall be created in the NCMMS and the appropriate corrective action taken by the Contractor. Documentation shall include periodic oil analysis tests to be performed at least annually, diagnostic standards, and parameters for oil changes. Subsequent to analysis, the Contractor shall submit the report in the NCMMS as an attachment to the Work Order.

C.6.12 Vertical Transportation Systems

[[[Note to Spec Writer: If vertical transportation equipment maintenance is to be included in the Contract, adjust this section accordingly. Also, if vertical transportation equipment maintenance is not included in this PBWS, carefully review this scope against the vertical transportation equipment maintenance contract to ensure that all requirements are accomplished by either one or the other contract and are not duplicated. The national elevator maintenance specifications can be found at the website page at: [Operations and Maintenance Specification](#). Must include, "The GSA Form 55 is required to be completed and signed off by the mechanic inspecting the elevator" in your elevator specifications.]]]

[[[Note to Spec Writer: Identify who shall be responsible for maintaining light fixtures, ballasts, and lamps installed in elevator cars and within the ceilings of cars if you have a separate elevator maintenance contract. The Contractor is not responsible for maintaining lighting within hoist ways.]]]

[[[Note to Spec Writer: Ensure that you mention the following codes if you are including VTS into the O&M Contract:

A17.1/CSA B44SafetyCodeforElevatorsandEscalators

A17.2 Guide for Inspection of Elevators, Escalators, and Moving Walks

A17.3 Safety Code for Existing Elevators and Escalators

A17.4 Guide for Emergency Personnel

A17.5 Elevator and Escalator Electrical Equipment

A17.6 Standard for Elevator Suspension, Compensation, and Governor Systems

A17.7 Performance-Based Safety Code for Elevators and Escalators

A18.1 Safety Standard for Platform Lifts and Stairway Chairlifts.]]]

C.6.12.1 Elevator Associated Equipment Maintenance

The Contractor is responsible for maintaining fire protection equipment and systems, ventilation and exhaust systems within hoist ways, elevator lobbies, and elevator machine rooms. The

Contractor shall maintain elevator cab lighting, (not light associated with hoist ways, elevator machine rooms, the pit, car top or elevator cars) and electrical equipment (including elevator transformers and disconnects) not directly part of elevator systems, and HVAC systems associated with elevator machine rooms and systems. The Contractor shall provide assistance if required in performing elevator testing, including after Normal Work Hour requirements.

[[[Note to Spec Writer: If any of this equipment is within the scope of the elevator maintenance contract, adjust the language accordingly. If any wheelchair lifts, hydraulic loading ramps or window washing scaffolding equipment are in the building, indicate who is responsible; maintenance responsibilities for these systems vary. Identify number of elevator tests to be performed and estimated hours of assistance necessary.]]]

C.6.13 Architectural and Structural Systems

C.6.13.1 General

The Contractor must maintain, repair, replace, modify, and restore all of the architectural and structural components of the building up to **[[[Insert total dollar cost]]]**. Exterior components of this work including: precast concrete systems, foundations, minor exterior wall components, retaining walls, docks, levelers, sidewalks and drives. Interior components of this work include walls, floors, and doors, ceiling systems, soundproofing, insulation, directories, flooring, specialty finishes and lighting. The Contractor shall confirm with the CO or Designee in writing that the work directed to be performed under this Section is work for which the requirements of 22.403-1 Construction Wage Rate Requirements statute (40 U.S.C. chapter 31, subchapter IV, Wage Rate Requirements (Construction), formerly known as the Davis-Bacon Act) do not apply.

The Contractor must perform all architectural and structural maintenance and repairs or replacements to the building interior and exterior extending to the property line. The Contractor must ensure the integrity of elements and materials in compliance with Federal, state, and national codes and standards (e.g., fireproofing materials, fire-stopping, fire and smoke doors, etc.). The Contractor must ensure the building is free of missing components or defects that could affect the safety, appearance, or intended use of the facility or could prevent any electrical, mechanical, fire protection and life safety, plumbing or structural system from functioning in accordance with its design intent.

Architectural Repairs and Replacements are intended to maintain the integrity of the building envelope (preventing water leaks through proactively addressing cracks, minor tuck pointing failures, reattaching loose roof flashing, fixing window cracked by weather or seal failures, water damaged ceiling tile) and address safety hazards (such as tripping concerns or hazards of falling materials). It is not to address cosmetic issues or to perform cyclic maintenance such as minute cracks in terrazzo floors, scaling of concrete sidewalks, repainting for the purpose of refreshing an area's look.

C.6.13.2 Replacement Items and Painting

All proposed replacement items shall be consistent with design documents and match existing equipment in quality, dimension, and material, quality of workmanship, finish, and color.

Painting is considered "touch-up," for purposes of this Contract and is to repair a specific and limited damaged area of prepared wall, paint or other architectural components. Painting shall extend to logical break points such as the floor or ceiling corners, door frames to avoid a patched look.

Repainting to correct for normal wear and tear to painted surfaces over time (Cyclic paint) is not required. Restriping of parking areas, driveways, roads, and vehicle inspection areas is required where striping is damaged or worn in a specific location, but not for general wear and tear of a large area over time. Repairs or replacement to pavement, walkways and facades are required where a specific location is damaged but not where an extensive area (defined as over 20% of the type of replacement) is degraded. Painting in mechanical areas needed for OSHA compliance, consistent equipment appearance, or other safety reasons is required.

C.6.13.3 Machinery Rooms

The machinery rooms, including walls and the equipment located within the machinery rooms shall be painted to maintain the professional appearance of the room and equipment. When painting equipment or other components in a machine room, the Contractor shall comply with the ANSI color coding system outlined in the ANSI A13.1, *Scheme for the Identification of Piping Systems*. Existing painted floors shall be maintained and bare floors should not be painted but be sealed. The Contractor shall not disturb materials suspected to contain lead-based paint; the Contractor shall immediately report the condition to the CO or designee. Machine rooms with excessive noise shall be labeled "Hearing Protection Required" and appropriate PPE shall be placed outside the room entrances.

C.6.13.4 Historic Buildings

[[[Note to Spec Writer: Delete if not applicable.]]]

The Contractor shall consider any building 50 years old or older as historically significant, regardless of National Register status and must contact the Regional Historic Preservation Officer (RHPO) before undertaking any work in the building. In addition, the following documents shall be consulted for any work involving the preservation of historic buildings:

- a) Historic Building Preservation Plan (HBPP).
- b) Historic Structure Report (HSR); and
- c) The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.

C.6.13.5 Architectural Woodwork

[[[Note to Spec Writer: The Region should establish the parameters based upon its climatological state.]]]

In some architecturally significant areas, it shall be necessary to adjust minimum setbacks for temperatures and humidity control from the established building standards to maintain and protect finished woodwork. These parameters shall be established as necessary by the CO or designee, in consultation with the RHPO. The Contractor shall be responsible for adjusting and maintaining those parameters as established.

C.6.13.6 Directories

The Contractor shall maintain building directories, including electronic directories and tenant common corridor signage but not electronic directories belonging to the tenants. The updating of information within the directories is typically done by the Government or by the Tenants.

C.6.13.7 Roofs

Roof repairs and routine roof preventive maintenance are necessary to protect the structures from significant degradation. Minor roof repair definition and cost thresholds of **[[[Insert total Dollar cost]]]** shall be discussed with the CO or designee as an important part of this work to be able to distinguish this work from construction projects. Therefore every repair scope of work shall be discussed with the CO or designee before work is undertaken.

C.6.13.8 Roof Anchorages

The Contractor shall provide for annual third party inspections and a ten (10) year recertification of designated roof anchorage points by qualified personnel. Roof anchorages (davits or permanent scaffolds if applicable) shall be inspected in accordance with the anchor manufacturer's requirements and any additional requirements contained in the installation certification. If equipment or support areas are identified or suspected of failure, the anchorage and its points of support shall be immediately tagged "out of service" and reported to the CO or designee. Under no circumstances may the equipment be placed back into service until it has been repaired and certified as safe for use. The Contractor shall consult 29 C.F.R. 1910.27 for further guidance. Copies of the inspection reports shall be provided to the CO or designee.

C.6.14 Perimeter Access Control Systems (Security fixtures)

C.6.14.1 General

[[[Note to Spec. Writer: Check on the MOA (check the June 2006 or latest MOA DHS/FPS & GSA) with FPS on responsibilities of maintenance & repair for these items and systems owned by the tenant.]]]

The Contractor is responsible for repair and maintenance of perimeter access control (PAC) system components, including key cards/pads, magnetic door holders, loop and detection sensors, wedge plates and pop-up barriers and bollards, sliding gates, garage doors, gate arms and operators, interconnecting cabling between system components, and onsite field controllers. This also includes door strikes, magnetic door contacts, request to exit sensors and remote release buttons. The Contractor is not responsible for central processing units and servers, including software, and programming of user's badges for facility access or purchasing of individual badges and other supplies. Where feasible, the Contractor shall be responsible for manually operating systems in the event of a failure of the automatic operator in order to allow access to the facility. Manual operation of the primary access doors or barriers controlled by the PACs system is limited to opening and closing once per day. Manually operating systems shall be coordinated and authorized by the CO or designee and are considered part of the Basic Services during Normal Working Hours and reimbursable after hours. The Contractor shall track these assets and their maintenance.

C.6.15 Child Care Center

[[[Note to Spec Writer: delete if not applicable.]]]

The Contractor shall maintain all fixed equipment and systems, including playground equipment and carbon monoxide detectors associated with the Child Care Center. The Contractor shall repair systems upon request (including kitchen and laundry equipment) and according to work items identified by the Annual Child Care Center Survey.

SECTION 7 ADMINISTRATIVE INSTRUCTIONS

C.7.0 Initial Inspection

The contractor(s) (*i.e.*, incoming Contractor for new facility, outgoing contractor and incoming Contractor for an existing facility) and the CO or designee shall make a complete and systematic initial inspection together during the startup phase for a new facility or the transition phase for an existing facility that shall include all mechanical, electrical, fire protection, and life safety systems, environmental systems, utility system, windows, motorized blinds, if applicable, doors, and other structural features for which maintenance and repairs are covered by the PBWS. The purpose of this inspection is to discover and list in an existing deficiency report all deficiencies that exists in the equipment and systems covered by the PBWS, as well as the Contractor's (incoming contractor) itemized price (including labor, materials, overhead, and profit) for correcting each deficiency. This report covers all equipment and systems within the building regardless whether or not they are listed in the building inventory. The Government will elect to have all or any part of this work performed by the incumbent contractor, incoming Contractor, Government employees, or other contractors. The incumbent contractor will be given the opportunity to correct items in the Initial Deficiency Report. The existing deficiency report shall not include any items that would be replaced, repaired or adjusted during the performance of normal preventive or predictive maintenance.

[[[Note to Spec Writer: Regions can alter language in 7.1, as needed. Regions can choose to allow the Contractor to conduct the existing deficiency inspection without the CO or designee present. In these instances the following language shall be inserted: "The CO or designee shall defer/approve inspection activities without the presence of a Government representative, subject to adequate documentation of conditions found by the Contractor".]]]

C.7.1 Existing Deficiency Inspection/Initial Deficiency Report

[[[It is recommended that a GSA staff or equipment specialist accompany the Contractor on this inspection.]]]

The existing deficiency inspection and list is meant to identify and document deficiencies that exist in the equipment and systems covered by this PBWS, but that shall not be repaired during routine preventive maintenance, and includes the Contractor's itemized price (including labor, materials, overhead, and profit) for correcting each deficiency. Existing deficiency Inspections are viewed as primarily "visual inspections" not a teardown inspection. If preventive maintenance, repair, or any other types of teardown or detailed engineering inspections later disclose a possible deficiency, then the determination of whether or not the deficiency was "Initial" will be made by the CO and COR. This inspection is required to be documented including all data required by the Initial Deficiency Report. If applicable, the Contractor will photograph the identified deficiency and provide a detailed explanation and location of the deficiencies. The Contractor shall submit an Initial Deficiency Report to the CO or designee for approval not later than ____ business days **[[[Insert timeframe, recommend 15 business days]]]** after the award of the Contract. Any dispute between the Government and the

Contractor as to the classification of an Initial Deficiency Report items shall be resolved under the Disputes Clause of the Contract (FAR 52.233-1). After submission of the Initial Deficiency Report the Contractor shall provide itemized estimates for correcting each deficiency that has been identified by the Contracting Officer or designee and the estimates shall remain in effect for _____ business days. **[[[Insert timeframe]]]** Deficiencies discovered after the submission of the Initial Deficiency Report shall not be considered pre-existing for purposes of this Contract, unless equipment is operational and cannot be secured and inspected. Any piece of equipment or system that cannot be inspected shall be identified as such within NCMMS asset records logs at the beginning of the deficiency report stating why it cannot be secured and inspected. An estimate of when the Contractor reasonably expects to be able to inspect the piece of equipment shall be provided. Equipment that can be brought into an acceptable level of operation through basic preventive maintenance and operational procedures must be done so and at no additional cost to the Government. As each piece of equipment is examined the Contractor shall document what shall be accomplished, if anything, to bring the equipment into an acceptable level of operation. Equipment shall be placed on a repair priority schedule by the Contractor, which schedule must be reviewed adjusted, and approved by the COR. The Contractor shall be responsible for making immediate adjustments or corrections that fall within the scope of routine preventive maintenance and operations required by this Contract. This includes making adjustments to controls; adjusting the BAS software, (e.g., correcting set points; reloading programs; restoring equipment being operated manually to automatic operation) this does not include changing established sequences of operation or programming sequences; testing water sensors, applying lubricants; cleaning fan housings, fans, coils, dampers, AHU sections, and equipment rooms, and replacing consumable parts or components. When an existing deficiency in an item is corrected, the Contractor shall assume full responsibility for the subsequent repair of the item as covered under the terms of this Contract at no additional cost to the Government. Nothing in the Initial Deficiency Report shall be construed as diminishing the obligations imposed by this Contract upon the Contractor to operate any deficient item (to the extent operable) or to adjust or maintain any such item.

C.7.2 Startup Phase/Transition Phase

[[[Note to Spec Writer: Regions shall choose either the Startup Phase or Transition Phase language below depending on whether the building is new/renovated or an existing facility. The recommended Startup Phase is 60 – 90 business days but shall be longer if warranted. If the building is an existing facility that is continuing operations rather than a newly completed construction or after being returned to operation after a major recapitalization renovation, use the Transition Phase paragraph. Since the Transition Phase services are performed before the Contract start date, regions shall decide whether they shall require the Contractor to factor the cost for this service into their monthly Contract cost, or if they capture this cost as a separate line item.

If there is not an accurate building inventory available, then include a separate line item cost in RFP to provide additional time and funds for the Contractor capture a new inventory.

The Startup Phase language immediately below is for O&M services following new construction or a major recapitalization renovation project. Regions may decide to separate the costs associated with the Startup Phase as a line item.]]]

C.7.2 Startup Phase (New or Modernized Facility)

The Contractor shall provide within _____ business days [Insert timeframe]] of startup services assistance in transitioning between the construction contractor's temporary operations and the O&M Contractor's initial operations. During this period, the building may be primarily unoccupied except for security personnel and transient GSA, agency, or Contractor personnel carrying out functions related to completing construction punch lists or in preparation of initial occupancy by tenants. During this period as equipment is accepted by the Government and officially (in writing) turned over to the Contractor for operations, the Contractor shall:

- a. Operate HVAC equipment to maintain conditions sufficient to avoid damage to finishes, especially millwork.
- b. Manage warranties, in cooperation with the construction manager.
- c. Submit a written Building Operating Plan for the Government's review.
- d. Assist with commissioning activities (note: commissioning schedules shall be made available on request by the CO or designee).
- e. Provide site access and escort to agency personnel and Contractors as necessary. If such services take more than 20 hours per week, then the Contractor shall be reimbursed by GSA for the additional time in accordance with the Additional Services provisions in this PBWS.
- f. Inspect all major or exposed HVAC equipment for cleanliness, absence of rust, accessibility for maintenance purposes, and other visible problems.
- g. Inspect machine rooms for OSHA compliance.
- h. Complete a building location and equipment inventory, including equipment attributes used by the NCMMS and develop a Preventive Maintenance Schedule on equipment inventory. This data shall be recorded. The Contractor shall provide certification to the CO or designee that the equipment inventory is complete and accurate in NCMMS.
- i. Inventory any stock of materials and repairs parts provided as part of the construction contract to the Government for safekeeping.
- j. Identify defects in equipment and systems covered by this Contract that were not previously identified in punch list records and notify the Government of such defects for inclusion in the punch list. If such deficiencies are determined to be out of scope for inclusion in the construction contractor's punch list, the Contractor shall compile such items in an Initial Deficiency Report as well as provide an itemized estimate for correcting each deficiency.
- k. Contractor shall train employees on all equipment operated and maintained by Contractor, including new equipment added during construction or renovation. Contractor training shall include BAS access, control procedures and continuance of operations during emergencies. Additionally the sequences of operations for equipment and systems as initially programmed shall be maintained by the Contractor for reference. The Contractor shall maintain the records of the training and make records available to the CO or designee upon request.

- l. Contractor shall obtain ENT credentials.
- m. Complete the Government-furnished NCMMS training as well as the re-tuning training.

C.7.2.1 Startup Phase Schedule (Transition Phase)

Within _____ business days **[[[Insert timeframe]]]** of the startup phase commencement, the Contractor shall submit a work and oncoming staffing schedule to the CO or designee for the startup phase. This schedule shall describe on a weekly basis, work to be accomplished and staff to be on boarded. At the end of each week during the startup phase, the Contractor shall submit a report describing the work accomplished that was actually completed.

OR

C.7.2 Transition Phase

[[[Note to Spec Writer: Check the current contract for the phase-out period.]]]

The Contractor shall provide within _____ business days **[[[Insert timeframe]]]** of transition services prior to the Contract start date to assist transitioning between contractors. **[[[Note to Spec Writer: Refer to the note above and choose to ask the Contractor to either account for this cost in its monthly Contract amount or to account for this cost in a separate line item.]]]** The purpose of this phase is to permit a transition that is seamless to the tenants and to assess the condition of the building and incomplete maintenance work at the time of contractor transition. During this period, the incoming Contractor shall:

- a. Revise and submit to the CO or designee by the end of the startup phase an updated building operating plan.
- b. Inspect the condition of all equipment and systems for which the Contractor shall assume responsibility.
- c. Revalidate and provide corrections to NCMMS locations and equipment inventory. Provide Work Order history and document all deferred or open Work Orders. Provide a consolidated list of Work Orders that are deferred, open, pending completion and submit an Action Plan on completing these items. The Contractor shall provide certification to the CO or designee that the equipment inventory is complete and accurate in NCMMS.
- d. Review the preventive maintenance schedule in the NCMMS. Cross-check preventive maintenance schedules and guides used by the outgoing contractor versus any newly proposed guides and schedules. The new periodic maintenance schedule and guides shall be based off of the last time preventive maintenance was performed and in accordance with the requirements of this Contract.
- e. Review the current schedule of maintenance and revalidate in line with accepted proposed maintenance schedule.
- f. Be responsible for creating and maintaining the preventive maintenance schedule in the NCMMS and entering data of past performance of maintenance for each piece of equipment where needed.
- g. Complete the Government-furnished NCMMS training, as well as the re-tuning training.

- h. Submit an Initial Deficiency Report, including an itemized estimate for correcting each deficiency to the CO or designee not later than ____ business days **[[[Insert timeframe, recommend 15 business days]]]** after the award of the Contract.
- i. If the Contractor-proposes custom job plans, obtain approval from the CO or designee and load the custom job plans into the NCMMS. Note: The NCMMS contains PBS job plans, and the latest Preventive Maintenance Guide.

C.7.2.1 Transition Phase Schedule

Within the ____business days **[[[Insert timeframe]]]** of the transition phase commencement the Contractor shall submit a work and oncoming staffing schedule to the CO or designee for the transition phase. This schedule must describe on a weekly basis the work to be accomplished and the staff to be on boarded. At the end of each week during the transition phase, the Contractor must submit a report describing the work that was actually completed.

C.7.3 Phase-out Transition Period

When the Contract ends, the Contractor shall comply with FAR Clause 52.237-3 Continuity of Services. During this phase-out period, the contractor shall also:

- a. Assist the CO or designee and incoming Contractor for a seamless transition in operations and maintenance with no adverse effect on the building tenants.
- b. Provide GSA and the incoming contractor with access to all records and official documentation (both hard copies and electronic as applicable) required by this Contract.
- c. Provide training to the incoming Contractor on methods of accessing and programming the BAS and other control systems.
- d. Show the incoming Contractor where all archived programs and systems literature is maintained. On the last performance day of the Contract, the Contractor shall turn over to the CO or designee all keys and identification badges or cards.
- e. Coordinate and complete disposal, cleanup, and transfer of all materials according to applicable laws.
- f. Provide all data records (e.g., database files, and spreadsheets) relating to building systems, assets, Work Orders, permits, work activities and other related matters to the CO or designee.
- g. Provide NCMMS transition services to assist transitioning between incumbent and incoming contractors.

C.7.4 Contract Closeout Examination and Withholding of Final Payment

On a mutually agreed-upon date, but no less than 90 business days prior to the Contract date, the Contractor and the CO and/or designee shall, together make a complete inspection of all mechanical, electrical, plumbing, structural, and utility distribution systems and equipment at the site covered by this Contract. This inspection is to establish the condition of the building systems. There shall be no additional expense to the Government with regard to this inspection and testing regardless of the time or date scheduled. The Government shall employ the services of another contractor in the development of such a deficiency list and upon completion provide the Contractor with a copy of work not completed, including the monetary value the Government has assigned for each item. Based upon this inspection, the Contracting Officer or

designee shall provide an existing deficiency list to the Contractor. The Contractor shall have 30 business days from the receipt of this list to correct all items that fall within the scope of this contract.

It remains the responsibility of the Contractor to make all adjustments (preventive maintenance and repairs) to bring all equipment to an acceptable level of performance and satisfaction as determined by the CO or designee. All such work is to be completed and found acceptable by the CO or designee prior to the Contract expiration date. Final payment shall be reduced by the value of work not completed or found unacceptable.

SECTION 8 PUBLICATIONS AND CITED STANDARDS

C.8.0 Publications

The following publications, executive orders and legislative acts are incorporated by reference as setting quality, performance, and design standards for work required in this PBWS. Unless a specific date is provided, references are for the current edition published at the time of issue of the solicitation, including any addenda or errata published by the issuing organization. The Contractor is responsible for obtaining access to all referenced documents at its own expense.

[[[Note to Spec Writer: Regions shall add or delete references as applicable to their location. Indicate whether the publications shall be provided by the region or if they are available via the web site in document titled “Web Links” at: [Operations and Maintenance Specification.](#)]]]]

- Public Buildings Service Operations and Maintenance Standards 2018
- Facilities Standards for the Public Buildings Service (PBS P100)
- U.S. Courts Design Guide
- Asbestos Hazard Emergency Response Act
- ASHRAE Guideline 1 HVAC Commissioning Process
- ASHRAE Guideline 4 Preparation of Operating and Maintenance Documentation for Building Systems
- ANSI/ASME A17.1 Safety Code for Elevators and Escalators
- ANSI/ASHRAE Standard 15 Safety Code for Mechanical Refrigeration
- ANSI/ASHRAE Standard 34 Number Designation and Safety Classification of Refrigerants
- ANSI/ASHRAE Standard 55, Thermal Environmental Conditions for Human Occupancy
- ANSI/ASHRAE Standard 62, Ventilation for Acceptable Indoor Air Quality
- ANSI/ASHRAE Standard 100, Energy Conservation in Existing Buildings/Commercial
- ANSI/ASHRAE Standard 111, Practices for Measurement, Testing, Adjusting, and Balancing of Building Heating, Ventilation, Air-Conditioning, and Refrigeration Systems
- ANSI/ASHRAE Standard 188 Legionellosis: Risk Management for Building Water Systems
- ANSI/ASSE A1264.2-2012 Standard for the Provision of Slip Resistance on Walking/Working Surfaces
- ANSI/IWCA I-14.1, Window Cleaning Safety Standard
- American Society of Mechanical Engineers ASME A17.1/CSA B44, Safety Code for Elevators and Escalators
- ASME A17.2, Inspector's Manual for Elevators
- ASME Boiler and Pressure Vessel Code
- ASME CSD-1 Control and Safety Devices of Automatically Fired Boilers
- Building Technologies Technical Reference Guide : refer to website page: [Operations and Maintenance Specification](#)
- Child Care Center Design Guide PBS-140
- Clean Air Act, 42 U.S.C. § 7401 *et. seq.*

- Clean Water, 33 U.S.C. § 1251 *et. seq.*
- DOE/EE-0157, International Performance Measurement and Verification Protocol
- Energy Policy Act of 2005, 42 U.S.C. § 13201 *et. seq.* and 42 U.S.C. 15801 *et seq*
- Energy Independence and Security Act of 2007, 42 U.S.C. *et seg.*
- EPA Green Book
- EPA Purple Book
- Executive Order 13693 Planning for Federal Sustainability in the Next Decade
- Executive Order 13788 Buy American and Hire American
- GSA Order CIO 2100.1K GSA Information Technology Security Policy
- GSA Sustainable Environmental Management System (GSA.GOV/SEMS)
- GSAlink Standard Operating Procedure, refer to website page: [Operations and Maintenance Specification](#).
- Guideline 3-1990 and addendum, or latest, FAR 52.223-2, Affirmative Procurement of Biobased Products Under Service and Construction Contracts; ARI Standard 700-1988, Specifications for Refrigerants or latest edition, and appendix A to 40, C.F.R., part 82, subpart F, Recycling and Emissions Reduction.
- International Building Code
- International Fire Code
- International Plumbing Code
- International Mechanical Code
- National Board of Boiler and Pressure Vessel Inspectors, National Board Inspection Code
- NETA Maintenance Testing Specification for Electrical Power Distribution Equipment and Systems
- TP-1, National Electrical Manufacturers Association (NEMA), Guide for Determining Energy- Efficiency for Distribution Transformers
- NEMA MG-1., Motors and Generators
- NEMA Application Guide for AC Adjustable Speed Drive Systems
- NFPA 10, Standard for Portable Fire Extinguishers
- NFPA 12, Standard on Carbon Dioxide Extinguishing Systems
- NFPA 12A, Standard on Halon 1301 Fire Extinguishing Systems
- NFPA 13, Standard for the Installation of Sprinkler Systems
- NFPA 14, Standard for the Installation of Standpipe and Hose Systems
- NFPA 17, Standard for Dry Chemical Extinguishing Systems
- NFPA 17A, Standard for Wet Chemical Extinguishing Systems
- NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection
- NFPA 22, Standard for Water Tanks for Private Fire Protection
- NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances
- NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems
- NFPA 54-ANSI Z223.1 - National Fuel Gas Code
- NFPA 70, National Electrical Code
- NFPA 70E, Standard for Electrical Safety in the Workplace

- NFPA 70B, Recommended Practice for Electrical Equipment Maintenance
- NFPA 72, National Fire Alarm and Signaling Code
- NFPA 80, Standard for Fire Doors and Other Opening Protectives
- NFPA 85, Boiler and Combustible Systems Hazards Code
- NFPA 92, Standard for Smoke Control Systems
- NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
- NFPA 101, Life Safety Code
- NFPA 105, Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives
- NFPA 110, Standard for Emergency and Standby Power Systems
- NFPA 111, Standard on Stored Electrical Energy Emergency and Standby Power Systems
- NFPA 780 - Standard for the Installation of Lightning Protection Systems
- NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems
- National Institute for Certification in Engineering Technologies (NICET) publications and issuances
- National Institute for Safety and Health publications and issuances
- Presidential Memorandum, June 20, 2014 entitled: "Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators"
- PBS Order 1095.2 Fuel Storage Tank Management
- PBS Order 100.7 Drinking Water Quality Management
- Property Managers Child Care Desk Guide
- Resource Conservation and Recovery Act, 42 U.S.C. 6901 *et seq.*
- Safe Drinking Water Act, PL 93-523, as amended, 42 U.S.C. 300f *et seq.*
- Sheet Metal and Air Conditioning Contractors National Association HVAC Systems Testing, Adjusting and Balancing
- Technology Policy for PBS-Owned Building Monitoring and Control Systems refer to website page: [Operations and Maintenance Specification](#)
- 29 C.F.R. part 1910, OSHA General Industry Standards
- 29 C.F.R. part 1926, Safety and Health Regulations for Construction
- 40 C.F.R. Protection of Environment
- 40 C.F.R. part 761, Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions, in general and specifically with regard to Electrical Transformers
- 40 C.F.R., 141.43, Sections A and D, EPA Safe Drinking Water
- 41 C.F.R. part 102-74, – Facility Management
- Toxic Substances Control Act, 15 U.S.C. § 2601- 2629 *et. seq.*